STATE OF MINNESOTA DISTRICT COURT
COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT

- - - - - - - - - - - - - - - - - - -

The State of Minnesota,
by Hubert H. Humphrey, III,
its attorney general,
and
Blue Cross and Blue Shield
of Minnesota,

Plaintiffs,

vs. File No. C1-94-8565

Philip Morris Incorporated, R.J.
Reynolds Tobacco Company, Brown
& Williamson Tobacco Corporation,
B.A.T. Industries P.L.C., Lorillard
Tobacco Company, The American
Tobacco Company, Liggett Group, Inc.,
The Council for Tobacco Research-U.S.A.,
Inc., and The Tobacco Institute, Inc.,

Defendants.

- - - - - - - - - - - - - - - - - - -

TRANSCRIPT OF PROCEEDINGS
VOLUME 17, PAGES 3347 - 3559
FEBRUARY 11, 1998

P R O C E E D I N G S.

THE CLERK: All rise. Ramsey County District Court is again in session, the Honorable Kenneth J. Fitzpatrick now presiding.

(Jury enters the courtroom.)

THE CLERK: Please be seated.

THE COURT: Good morning.

(Collective "Good morning.")

THE COURT: Ladies and gentlemen and members of the jury, as you'll recall previously, I mentioned that I'll periodically remind you of the necessity of your avoiding reading any newspapers or magazines or listening to the radio or television concerning this particular case, having any discussions with any members of your family, spouses, girlfriends or boyfriends or other close members of your family, and of course not talking to anyone, any outsiders about the case, and again reminding you that should anyone from the outside contact you, please contact the court immediately so that we can address the issue. This is just another general reminder. I'll -- I'll be giving you that periodically through the case.

Counsel.

MR. BLEAKLEY: Thank you, Your Honor. Good

morning, ladies and gentlemen.

(Collective "Good morning.")

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

called as a witness, being previously sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BLEAKLEY:

Q. Good morning, Mr. Merryman.

A. Good morning.

Q. As you know, my name is Peter Bleakley and I'm counsel for one of the defendants, Philip Morris, in this case, and I'm going to ask you a few questions and hopefully get you out of here today.

Let me ask you first, Mr. Merryman, to tell us a little bit about your background. Where are you from and where did you grow up?

A. I was born and grew up in Rapid City, South Dakota, spent all of my formative years there, went to high school there, graduated from Rapid City Central High School. My mother still lives there.

Q. And what did you do after you graduated from high school?

A. I attended college in Beloit, Wisconsin, for a year, and transferred to Emerson College in Boston

following that.

Q. Did you graduate from Emerson?

A. Yes, I did.

Q. What kind --

A. In 1971.

Q. What kind of a degree did you receive?

A. I received a bachelor's degree in mass communications.

Q. And that was 1971 you said?

A. Yes, it was.

Q. After you graduated in 1971, what -- what did you do?

A. I returned to Rapid City to work for a cable television system in their news division, starting up their news department. Was one of the first cable systems in the country, as I recall, to do any significant amount of news and local public affairs programming.

Q. And how long did you hold that job?

A. I was there for little less than a year.

Q. What did you do next?

A. Following that I went to Sioux City, Iowa, where I was employed by the NBC television affiliate there to write and produce and anchor newscasts and do reporting.

Q. And how long did you hold that position?

A. I was there for a little less than a year.

Q. And what came next?

A. After that I took a job as news director at the Nebraska Television Network in Carney, Nebraska, which was a commercial network of four television stations that covered predominantly rural areas of Nebraska, Kansas and Colorado.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. And how long were you in Carney, Nebraska?
A. From approximately November 1972 until early 1976.
Q. So about four years?
A. Little less than that, yes.
Q. And you left Carney in 1976; is that right?
A. That is correct.
Q. And what position did you take then?
A. That is when The Tobacco Institute offered me a position as assistant to the president of the Institute.
Q. So you moved to Washington in 1976 then?
A. Yes, sir, I did.
Q. Is it fair to describe the five years that you spent before you went to The Tobacco Institute as a broadcast journalist?
A. That is correct, yes, sir.

Q. Now tell us how is it that you came about to take a position with The Tobacco Institute?
A. Well I became aware of their interest in hiring someone who was familiar with broadcasting and journalism. Friend of mine who ran a job-placement service for the Radio and Television News Directors Association told me of the position. I applied for it, and they asked for a substantial amount of background material on me, which I submitted, and went to Washington then for a personal interview, and subsequently I was hired.
Q. And what were you hired to do?
A. I was hired to respond to inquiries from the news media about issues that The Tobacco Institute addressed on behalf of its member companies.
Q. What kind of media inquiries were you responding to?
A. Well typically a reporter would call and ask for information on tobacco economics, tobacco history, taxation, smoking bans, smoking and health also on occasion. We responded, if we could, if we had the information, to those questions and were in a position of being the spokesman for the industry on those issues on which there was a common position.
Q. How did you --

What was the title that you had when you first went to work for TI?
A. Assistant to the president, sir.
Q. And how did you go about responding to inquiries, what -- what physically did you do?
A. Well we had information at the Institute in published form that we referred to, position papers. In terms of economic information, we'd gather that from sources such as the U.S. Department of Agriculture or state tax and revenue offices on taxation matters. We'd certainly review material that came to us in subscription form; for example, magazines and newspapers. So that we had as much

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

information as we could gather on -- on these issues, and also obviously we got a lot of information from our member companies.
Q. Did you, during this time that you were assistant to the president, did you do things other than respond to inquiries from the media?
A. Yes, sir. Occasionally I would pitch in to help write a news release. I would write -- sometimes I'd write speeches for myself. I don't think I wrote speeches for anybody else. We were asked on occasion to give speeches to civic clubs like Kiwanis Clubs and Lions Clubs. Also sometimes tobacco trade

magazines would ask us to write an article on a current issue for their magazine, and sometimes I would do that.
Q. How long did you hold this position of assistant to the president?
A. Until approximately 1980 or '81.
Q. And would you tell the jury what -- what position you took up next?
A. After that I was offered a position of director of communications at the Institute.
Q. And what year was that?
A. 1980 or 1981, I believe.
Q. And did your job responsibilities change when you became director of communications?
A. Yes, sir, they did. They were expanded quite a bit.
Q. And how were they expanded?
A. To include some administrative duties, to oversee the activities of three other people who would act as spokesmen for the Institute, for the industry, and also a support staff of two people.
Q. How long were you director of communications?
A. For approximately two years.
Q. And then what position did you take?
A. Then I was offered the position of

vice-president of The Tobacco Institute, which I took.
Q. And did your responsibilities change when you became a vice-president?
A. Not materially, no, sir.
Q. And is that the job that you have today?
A. Yes, sir, it is.
Q. So you've had essentially the same position for the past 15 years, approximately?
A. Yes, sir, that's right.
Q. Are you a part of a particular unit of The Tobacco Institute?
A. I'm part of the public affairs division.
Q. The public affairs division.
A. Yes, sir.
Q. And is there someone in that division to whom you report, or are you the -- the head of it? What is -- how does that operate?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. The public affairs division is headed by a senior vice-president whose name is Walter Woodson.
Q. Can you tell us a little bit about the organization of The Tobacco Institute? Are there divisions other than the public affairs division?
A. Yes, sir, there are.
Q. What are they?

A. There are three other divisions: one is the administrative division, which takes care of things like payroll and -- and personnel and computers; there is our state activities division, which oversees our efforts to monitor legislative and regulatory activity at the state and local level; and then there's our federal relations division, which oversees our activities at the federal level with respect to Congress and federal agencies.
Q. What -- what does the state activities division do?
A. State activities oversees our activity at the state and local level. We have, obviously, a lot of concerns with respect to legislation and regulatory -- regulation in the 50 states. A lot of legislators are in session right now. We have contract lobbyists who report to various regional vice-presidents who represent The Tobacco Institute in Minnesota and other states.
Q. When you joined The Tobacco Institute, how many employees did it have?
A. I believe there were approximately 30 employees at that time, sir.
Q. How many does it have today?
A. Somewhere around 50 or 54 employees, I believe.

Q. How many are there in the public affairs division, your division?
A. The division which I'm employed, I believe there are a dozen.
Q. Who supports The Tobacco Institute; that is, provides the funding for the organization?
A. Our funding comes entirely from our members, which are the cigarette manufacturers, manufacturers of tobacco products.
Q. If you would look in that small exhibit book you have there at the first exhibit that's marked PA000341.
A. All right.
MR. BLEAKLEY: Your Honor, at this time I offer PA000341 for illustrative purposes.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive PA000341.
BY MR. BLEAKLEY:
Q. I'm not sure you're going to be able to --
Let me first ask you what this document is, PA000341.
A. This is a document which, as it says, is the scope and activities of The Tobacco Institute. It

http://legacy.library.ucsf.edu/tid/gon05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

describes in general terms what The Tobacco Institute is and does.

Q. And what was the purpose for which this document was prepared?
A. We wanted to give people who were interested in knowing something about the Institute a general overview of our activities.
Q. As a general overview, does it accurately state what The Tobacco Institute does and doesn't do?
A. It -- it does, sir.
Q. Let me direct your attention to the second page of this exhibit, the page that reads, "What it does...

"The functions of The Institute are similar to those of many other industry or professional associations. The aim of The Institute is to foster public understanding of the smoking and health controversy and to increase awareness of the historic role of tobacco and its place in the national economy. It is a communicator of information and viewpoints on such matters to the public, news media and government at state" -- excuse me, "local, state and federal levels."

Does that accurately state what The Tobacco Institute does?
A. Yes, sir, it does.
Q. Now how does it accomplish that, that aim or

that function? The aim of the Institute, to foster public understanding, how does it do that?
A. We have a variety of publications that we make available to the news media, to the general public, on issues that The Tobacco Institute takes a policy or position on. We also have, as I mentioned a moment ago, people like me who act as spokesmen for the Institute and for the industry who are available to talk to the news media or talk to public groups upon invitation. We occasionally have had films on agriculture, for example, to give people an overview of what tobacco agriculture and history is like. And we also maintain documents for our own use in researching some of those issues.
Q. At the beginning of this paragraph it says "The functions of The Institute are similar to host of many other industry or professional associations." What does that mean?
A. Well there are hundreds if not thousands of trade associations and professional associations, a lot of them in Washington, D.C., and we are not unlike almost all of them with the exception that we don't promote the product, as some do on behalf of their members. But we're not in the business of trying to encourage smoking or discourage quitting,

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

so we're not involved in that commercial activity. But apart from that, what we do on behalf of our members is virtually indistinquishable from what a lot of other trade associations do.
Q. Do you in your job have occasion to talk with and meet with people who work for other trade associations?
A. Yes, sir, I do.
Q. Do you exchange ideas and have conferences and that sort of thing?
A. Yes, sir, both formally and informally we do.
Q. And based upon your knowledge of other trade associations, do they function pretty much like The Tobacco Institute does, except --
MR. CIRESI: Objection. Objection, hearsay, no foundation.
THE COURT: Sustained.
BY MR. BLEAKLEY:
Q. To your knowledge, do most industries in the United States have trade associations?
A. I believe they do, yes, sir.
Q. Let me return to -- or turn to the other page of Exhibit 000341 and direct your attention to the paragraph that reads, "What it doesn't do...
"The Institute has no role in competitive

activities of the tobacco industry such as purchasing, manufacturing, pricing, promoting or marketing tobacco or tobacco products."
Is that an accurate statement of what The Tobacco Institute does not do?
A. Yes, sir, it is.
Q. The Tobacco Institute does not promote the sale or purchase of cigarettes?
A. That is correct, sir.
Q. And does it promote smoking?
A. No, sir, we do not.
Q. Does it discourage smoking?
A. No, sir, it does not.
Q. Does The Tobacco Institute have any involvement in the business operations of its member cigarette companies?
A. No, sir, we do not.
Q. Let me go back to the other page of that exhibit, the section entitled "Speakers programs" which reads, "The Institute provides speakers on any tobacco-related subject for civic and service clubs, business on professional groups," and so forth, and then it reads, "Generally, the age of the audience is the only restriction on where they will schedule appearances, in line with the industry's longstanding

policy that smoking is not for the young but a custom of free choice for informed, mature persons. They do not, therefore, address young persons' groups." Do you see that?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. Yes, sir, I do.
Q. Is that an accurate statement, --
A. Yes, sir, it very much is.
Q. -- that The Tobacco Institute does not address young persons' groups?
A. That is correct.
Q. And how does The Tobacco Institute, for the purposes of this program, define "young persons' groups?"
A. We avoid addressing groups that are made up of anyone under the age of 21.
Q. How long has this policy existed?
A. To the best of my knowledge, ever since I've been at the Institute, 22 years.
Q. Has The Tobacco Institute taken steps to communicate to the public the policy that smoking is not for the young, but a custom of free choice for informed, mature persons?
A. Yes, sir, we have.
MR. BLEAKLEY: Your Honor, at this time I have a demonstrative exhibit entitled --

MR. CIRESI: May I see it before --
MR. BLEAKLEY: You've got it. It's the same.
MR. BLEAKLEY: -- Exhibit No. 2803, which we would offer for illustrative purposes.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive 2803 for illustrative purposes.
BY MR. BLEAKLEY:
Q. Now you have a copy of that in your exhibit book, I hope. Should be the next exhibit in there.
A. Don't --
Yes, I do.
Q. Well let me just ask you --
A. Yes, I do.
Q. Let me just ask you about it.
Tell us how the Institute has gone about communicating to the public the policy that smoking is not for the young, but a custom of free choice for informed, mature persons?
A. Well, in 1982 we launched an advertising campaign, the theme of which was Do Cigarette Companies Want Kids To Smoke? The Answer: No.
MR. BLEAKLEY: Your Honor, may I approach the witness with a small version of this exhibit?

Thank you.
Oh, you found it. Okay. Sorry.
Q. All right. Referring, if you would, to Exhibit 2803, is this the program on this exhibit identified as The Tobacco Institute ad campaign?
A. Yes, sir, that's correct.
Q. Okay. Would you describe for the ladies and gentlemen of the jury and the court what this campaign consisted of and why The Tobacco Institute

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

launched it.
A. It was a national advertising campaign in consumer magazines that were read by literally millions of Americans. We launched the campaign because there had been a leveling off in what had been a decline in youth smoking in the previous couple of years. We wanted to make certain that our industry policy on youth smoking was clearly enunciated and clearly understood, and this was our attempt to let people know that the industry did not want kids to smoke.
Q. And where was this ad campaign launched, in what media?
A. It was national magazines, sir.
Q. What kind of national magazines?
A. Such as Time, Newsweek, magazines such as that.

Q. And were you personally involved in this campaign?
A. I had no personal involvement in it, no, sir.
Q. Had you been involved in the policies in communicating to the public The Tobacco Institute's policy that smoking is not for the young, but a custom of free choice for informed, mature adults?
A. I've been consistently involved in communicating that policy over the years as a spokesman for the Institute in response to requests from reporters for our position on the issue and also in public appearances, yes, sir.
Q. Using Exhibit 2803, the next entry is 1984, "Tobacco Institute offers 'Helping Youth Decide', 'Helping Youth Say No' guide books to parents." Would you explain that program for the ladies and gentlemen of the jury, please?
A. That was a program in which we and the National Association of State Boards of Education cooperated to distribute these two booklets that are named. The booklets were written by child psychologists and child guidance experts at the National Association of State Boards of Education. They were an attempt to give parents in particular, but also really anyone who had substantial contact with young people, some

good guidance on how to help youngsters make good decisions about challenges that they were very likely to face as they were growing up. And then the second booklet, Helping Youth Say No, went a little further to help those same parents and other people who were in constant contact with youngsters, help them give these youngsters some guidance on how to say no to peer group pressure, how to handle things that came up about smoking, about drinking, about sexual activity, about drugs, all things that kids face as they're growing up. We knew that smoking wasn't the only thing that kids face as an issue, it was one of many, and we decided that, with the assistance of National Association of State Boards of Education, it

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

was a good idea to try to address them all in these booklets that we made available free of charge to -- to parents.
Q. Did you personally make any speeches dealing with this subject as a part of this program?
A. Oh, yes, sir. I traveled extensively around the country to give -- give presentations on this subject, to be interviewed by radio and television reporters and to give presentations to public groups.
Q. Would you turn to the next exhibit in the book in front of you, which is 000531. Do you have that

in front of you?
A. Yes, sir, I have that.
Q. Is that an example of such a speech?
A. Yes, sir, it is.
MR. BLEAKLEY: Your Honor, we offer Exhibit 000531.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive 000531.
BY MR. BLEAKLEY:
Q. This is "STATEMENT OF WALKER MERRYMAN, VICE PRESIDENT, TOBACCO INSTITUTE, SEPTEMBER 25, 1984;" is that correct?
A. Yes, sir, that's correct.
Q. And where was this speech given?
A. This was at the National Press Club in Washington, D.C.
Q. And to whom were you making this speech?
A. I was making these remarks to reporters who had gathered to hear of this project that we were undertaking.
Q. And who is the Mrs. Davidson referred to in the second paragraph of your speech?
A. That would be Jolly Ann Davidson, who was past president of the National Association of State Boards of Education.

Q. And how did you happen to be making the speech together with Ms. Davidson?
A. She and I were taking this opportunity to publicly launch Helping Youth Decide and making people aware of its existence.
Q. And you told this group that you were here this morning because we do not want youngsters smoking cigarettes?
A. That is correct.
Q. And that the program that was described by Mrs. Davidson, that's the program you've just been talking about; is that correct?
A. Yes, sir.
Q. That you were taking that policy one step further. "To date, we have avoided encouraging youngsters to smoke. This effort should actively discourage youth smoking." Is that correct?
A. That is correct.
Q. And is that in fact what you and The Tobacco

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Institute have done since 1984?
A. Yes, sir, we have.
Q. Now what materials did you disseminate and to whom as a part of this program?
A. We disseminated, as I mentioned before, these booklets that were written by child guidance

specialists at the National Association of State Boards of Education, the booklet called Helping Youth Decide and then later Helping Youth Say No. We distributed them by advertising their availability free of charge. Some people in organizations wrote in for multiple copies, which we were happy to provide. And we distributed them, to the best of my recollection, in every state in the union.
Q. Is that the booklet that is referred to on page two of your speech?
A. Yes, sir, it is.
Q. And I see that in the second paragraph you said, "We are mindful that the booklet alone is not enough. It must find its way into the American home -- and that is why advertisements offering the booklet at no charge will begin appearing in major publications tomorrow." Is that -- was that part of the policy?
A. Yes, sir, it was.
Q. Would you turn to the next exhibit in your exhibit book there, which is 000233, an exhibit entitled "Hoping Youth Decide."
A. Yes.
Q. Do you have that in front of you?
A. Yes, I have that.
MR. BLEAKLEY: Your Honor, at this time we

offer 000233.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive 000233.
BY MR. BLEAKLEY:
Q. Is this the booklet that you described in your speech and that you talked about here just a moment ago?
A. Yes, sir, it is.
Q. And this booklet was distributed throughout the United States?
A. It was.
Q. Was this published in 1984?
A. Yes, sir, it was.
Q. Take a look at the next exhibit in your booklet, which is 000238, another booklet entitled "Helping Youth Say No."
A. All right, sir.
Q. Can you tell us what the difference is between this booklet, 002 -- 000238 and 000233?
A. Well this booklet really is an attempt to expand and build on Helping Youth Decide by giving parents useful information that they can put into practice with their own youngsters on how to help those kids resist peer pressure, say no to their friends if

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

their friends try to get them to use drugs, to smoke,

to drink, to engage in -- in sexual activity or anything else that they might be faced with as adolescents. We thought it was a logical next step.
Q. So is it fair to say it was a subsequent version of the earlier booklet?
A. Yes, sir, it was.
MR. BLEAKLEY: We offer 000238, Your Honor.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive 000238.
BY MR. BLEAKLEY:
Q. And the next exhibit in your binder there is Exhibit 000226. This one is entitled "Tobacco: Helping Youth Say No." What is this?
A. This follows on to the first two, and as you'll notice, it is tobacco-specific, it says "Tobacco: Helping Youth Say No," and we decided that it made sense for us to zero in on this issue, tobacco use among youngsters, and again focus the attention on how parents, but also anyone, really, who deals with youngsters on a regular basis, can help youngsters deal with peer pressure that they face to smoke. And this booklet we thought was a very good teaching and learning tool for parents and their youngsters.
MR. BLEAKLEY: Your Honor, at this time we offer 000226.

MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive -- is it 226, counsel?
MR. BLEAKLEY: Yes, Your Honor.
THE COURT: All right.
MR. BLEAKLEY: 000226.
THE COURT: Court will receive 000226.
BY MR. BLEAKLEY:
Q. And this is the cover page of that booklet?
A. Yes, it is.
Q. "Tobacco."
And when did you start distributing this booklet?
A. This would have been about 1989, I believe.
Q. How many of these Helping Youth Say No booklets has The Tobacco Institute distributed throughout the United States?
A. I believe there have been well over a million copies distributed.
Q. And how many have been distributed in Minnesota, if you know?
A. I don't recall the specific number. We did keep a list -- of a tally state by state so that we were aware of how many. But certainly there was distribution within Minnesota because people saw the

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

ads and -- and wrote or called to get copies.
Q. Referring, if you would, back to the time line, the next entry is for 1986, "Tobacco Institute funds 'Community -- Community Alliance Programs'."
Can you explain for us what these community alliance programs were?
A. Yes, sir. Those were programs that we funded in communities around the country to encourage grass roots organizations to become familiar with the publications Helping Youth Decide, Helping Youth Say No, and distribute them more intensively at the -- at the grass roots level in communities. As I say, there were a number of grants in towns nationwide to help do that.
Q. Grants. You mean money grants?
A. Small grants of about, I believe, three thousand dollars was typical, to pay for administrative costs just to get the program off the ground.
Q. And these were funded by The Tobacco Institute?
A. Yes, sir, they were.
Q. The next entry is for 1990, and it's entitled "C.O.U.R.S.E. CONSORTIUM releases 'Tobacco: Helping Youth Say No'. Tobacco Institute launches 'It's the Law'." Can you tell us about those programs?
A. Yes. The family C.O.U.R.S.E. Consortium was an

organization made up of educators, child-guidance specialists, people who were interested in adolescent issues who had agreed to distribute -- be the administrative distribution point for our booklet "Tobacco: Helping Youth Say No." They were volunteers who became involved in this effort, I think at the -- as I recall, at the request of Mrs. Davidson, whom we talked about earlier. They also were very instrumental in making certain that Tobacco: Helping Youth Say No got substantial publicity in their communities.
The It's the Law project was something separate that The Tobacco Institute did in working with the retail community. Tobacco retailers, obviously, are the ones who sell the cigarettes to people, convenience stores, grocery stores, chain drug stores, and we wanted to help those retailers understand what their responsibilities were under the laws in their state with respect to the sale of cigarettes. We wanted them to understand what the law was, we wanted them to observe it.
We provided them with free material that they could give to their store clerks so that the clerks and managers could understand what the law was. We provided them with material that they could display

in their stores on their store windows, on their doors, at the point of purchase, at the cash register, that said "It's the Law. We don't sell tobacco products to anyone under the age of 18" in most states, in three states it's 19 years, and we

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

made wide distribution of that material free of charge to retailers across the country.
Q. Approximately how many of these kits did you distribute to retailers across the country?
A. There were, I believe, 300,000 kits that had been sent to retailers, either directly in response to advertisements we placed in retail trade magazines or through tobacco wholesalers. I think in some cases the manufacturing companies themselves in their contacts with retailers dropped off these free kits.
Q. Were these It's the Law kits distributed in Minnesota, to retailers in Minnesota?
A. Yes, sir, they most certainly were.
Q. The next entry on Exhibit 2803 is for December 1995, "Coalition for Responsible Tobacco Retailing launches 'We Card'." Can you tell us about that? What was that program?
A. Yes, sir. That was a coalition of which The Tobacco Institute was a part, but it also included other trade associations representing the retail and

wholesale community. It was a follow-on, a natural one I think, to the It's the Law program, because what we were doing with We Card was distributing, again free of charge, material to retailers that they could display to tell customers that they were serious about observing the law, that they were going to card people who wanted to make tobacco purchases. And again, these kits were -- were state-specific because not every state has a uniform law when it comes to the sale of tobacco products. Again, the -- the Coalition for Responsible Tobacco Retailing distributed this material free of charge to retailers around the country. I've seen it in use in many parts of the country. And it included -- the coalition, as I said, included not just The Tobacco Institute, but also other trade associations for the retail and wholesale industries.
Q. Exhibit 000149 is a box entitled "We Card." Is this the We Card kit that's distributed to retailers across the United States?
A. Yes, sir, it is.
MR. BLEAKLEY: Your Honor, may I approach the witness?
(Box handed to the witness.)
MR. BLEAKLEY: At this time we offer

000149.
MR. CIRESI: No objection, Your Honor.
THE COURT: Court will receive 000149.
BY MR. BLEAKLEY:
Q. Can you open up 000149 and sort of show the ladies and gentlemen of the jury what -- what it consists of and how it was used.
A. Well this, for example, would be a sign for the counter, perhaps next to the cash register. This is a video tape that store employees and store managers

http://legacy.library.ucsf.edu/tid/gom35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

would watch so that they could understand why this was an important subject and what their duties and responsibilities would be. A number of lapel pins for clerks to wear so that customers would be aware of the fact that that store is serious about observing the law. This was a calendar, and I think you've probably seen similar ones in, for example, liquor stores. It tells you how old you have to be in order to buy tobacco products in that store. And there is additional training material for the retailer and for the retailer's employees and additional signage that can be placed on the window, on the glass door, on the cash register. And then, obviously, order forms for more material in case the retailer needs additional supplies.

Q. And was this kit, 000149, distributed to retailers in the state of Minnesota?
A. Yes, sir, it's been distributed to retailers in Minnesota. I think about 14,000 of these kits have gone to retailers here.
Q. Now we talked a moment ago about the speech that you made at the National Press Club. Have you made other speeches that have dealt with The Tobacco Institute's policy that youth shouldn't smoke?
A. Yes, sir.
Q. Personally?
A. Yes, sir, I have.
Q. Throughout various parts of the United States?
A. Yes, sir. I've traveled extensively to do that.
Q. Have you ever come to Minnesota to talk about that program?
A. I have.
Q. When was that?
A. Mrs. Davidson and I had been in Minnesota on more than one occasion in the 1980s to speak about the industry's anti-youth-smoking projects.
Q. And what did you do when you were here in Minnesota?
A. We talked to reporters for radio and television stations and newspapers.

Q. And did you talk with anyone else when you were here in Minnesota, representatives of the state of Minnesota?
A. Yes. I have personally had a meeting with a representative of the Minnesota State Department of Health.
Q. And what was that person's name?
A. Mark Skubic, I believe.
Q. And tell us about your meeting with Mr. Skubic. What -- what happened?
A. It was a meeting to give him some of the details of the tobacco industry's involvement in these projects, in these programs to try to discourage youth smoking, and so I gave him a briefing on what the industry had done, what we had accomplished so

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

far, what we were looking forward to in the future.
Q. Did you provide any materials to Mr. Skubic when you met with him?
A. I believe I did, yes, sir.
Q. What did you provide?
A. Copies of our booklets.
Q. The Helping Youth Decide booklets?
A. Yes, sir.
Q. Do you have any idea how many you gave him?
A. No, I don't recall.

Q. Okay. Now is The Tobacco Institute still today, in 1998, involved in a campaign to -- involving youth smoking?
A. Well yes, sir, we are. We certainly are.
Q. And are you personally continuing to be involved in that?
A. I am.
Q. Has anyone from any of the member tobacco companies ever discouraged you or The Tobacco Institute from engaging in these programs?
A. No, sir, not to the best of my knowledge.
Q. Have you ever received any indication from any of the people with whom you meet that the members of The Tobacco Institute were not fully behind the programs?
A. No, sir.
Q. Have they told you that they were, in fact were behind the program?
A. Absolutely.
MR. CIRESI: Objection, calls for hearsay, Your Honor.
THE COURT: You may answer that.
A. Absolutely they have, yes, sir.
Q. Now Mr. Ciresi asked you a number of questions about The Tobacco Institute's public statements with

regard to smoking and health. You remember those questions?
A. Yes, sir.
Q. Does The Tobacco Institute today in 1998 issue press releases and publications dealing with smoking and health?
A. No, sir, we don't.
Q. How --
When did you stop doing that?
A. Well I think the last time I recall we issued anything was in the early 1980s.
Q. You'd still respond to inquiries from people about the Institute's position if they asked; is that right?
A. Yes, sir. If a reporter called and asked for our opinion on a smoking-and-health issue, if it was something that I could respond to, I would.
Q. But you don't prepare and issue on your own press releases or public statements, and haven't for several years; is that right?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. That is correct.
Q. And why is that? Why -- why don't you do it any more?
A. Well it seemed that there was less and less interest in the subject as the American public

believed that smoking caused disease.
MR. CIRESI: I'm going to object to his conclusion as to what the American public thought. There's no foundation.
THE COURT: Sustained.
MR. BLEAKLEY: Your Honor, this -- Your Honor, this is being offered for the state of mind of Mr. Merryman and The Tobacco Institute and not for the purpose of proving, in fact, what the public knew or believed.
THE COURT: Sustained.
BY MR. BLEAKLEY:
Q. Now I want to ask you a couple of questions about documents that Mr. Ciresi showed you during his direct -- during his cross-examination, one of which is Trial Exhibit 18089. I'm not sure which of those books it's in.
MR. CIRESI: The number again, counsel.
MR. BLEAKLEY: 18089.
MR. CIRESI: It would be in volume two.
MR. BLEAKLEY: Volume two? Thank you.
A. I have it, sir.
Q. Do you remember being shown that --
A. Yes, sir.
A. -- exhibit by Mr. Ciresi?

A. Yes, sir, I do.
Q. And do you remember being asked by Mr. Ciresi whether Philip Morris ever showed you that document?
A. Yes, sir.
Q. And do you remember being asked whether or not The Tobacco Institute had ever disclosed the contents of that document to the public or to Congress?
A. I recall that question, yes, sir.
Q. Now this exhibit, Trial Exhibit 18089, is a document written by William L. Dunn, Jr., Philip Morris Research Center, Richmond, Virginia.
Do you know Mr. Dunn?
A. No, sir.
Q. Do you know what he does?
A. No, sir.
Q. Do you know what purpose he had when he wrote this document?
A. No, I don't, sir.
Q. Do you know who attended this conference that Mr. Dunn was talking about in this document?
A. No, I don't, sir.
Q. Do you know whether in fact this conference that Mr. Dunn is writing about was a Philip Morris conference?
A. No, I don't know that, sir.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Q. Do you know, for example, looking at page two, when Mr. Dunn says, "In January 1972, the Dutch side of St. Martin was invaded by an unlikely party of twenty-five scientists," do you know whether those scientists were Philip Morris scientists or whether they were scientists from all across the country?
A. I do not know, sir.
Q. Do you know whether the pharmacologists, sociologists, anthropologists and psychologists referred to were Philip Morris employees?
A. No, sir, I do not.
Q. So far as you know, they were not Philip Morris employees.
MR. CIRESI: Well objection, calls for speculation. He just said he didn't know who they were.
THE COURT: Sustained.
BY MR. BLEAKLEY:
Q. Do you know what the Philip Morris Research Center is?
A. I've heard the name, and I believe I've seen the building from the highway, but that would be about the extent of my knowledge.
Q. Do you know how many employees there are in the Philip Morris Research Center?

A. No, sir, I don't.
Q. Do you know whether there are other scientists in the Philip Morris Research Center besides Mr. Dunn?
A. I don't know anything about the center, sir.
Q. Do you know whether other scientists in the Philip Morris Research Center have the same views that Mr. Dunn expressed in this document?
MR. CIRESI: Objection, no foundation. He just said he didn't know anything about the center.
THE COURT: Sustained.
Q. Do you know whether Philip Morris as a company endorsed the views expressed in this document?
A. No, sir, I don't know.
Q. Do you have any idea why Mr. Dunn wrote this document?
A. No, sir.
MR. CIRESI: Objection, Your Honor, no foundation. He already disqualified himself.
THE COURT: He's answered it.
Q. Do you know what was done with this document after it was written?
A. No, sir.
Q. Have you ever spoken to Mr. Dunn about this document?

A. No, sir.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Q. Do you remember being asked by Mr. Ciresi about the statement in this document, "Smoke is beyond question the most optimized vehicle of nicotine and the cigarette the most optimized dispenser of smoke?"
A. Yes, sir.
Q. And you said you'd never seen that before?
A. That is correct.
Q. Take a look, if you would, at the next paragraph of that exhibit, which reads, "Lest anyone be made unduly apprehensive about this drug-like conceptualization of the cigarette, let me hasten to point out that there are many other vehicles of sought-after agents which dispense in dose units: Wine is the vehicle and dispenser of alcohol, tea and coffee are the vehicles and dispensers of caffeine, matches dispense dose units of heat, and money is the storage container, vehicle and dose-dispenser of many things." Do you see that?
A. Yes, sir, I do.
Q. Had you ever seen that before either?
A. No, sir, I had not.
Q. So you don't have any knowledge whatsoever of why this document was prepared, what use was made of it by Philip Morris or anyone else; is that right?

A. That is correct, sir.
Q. Okay. Now you were asked yesterday by Mr. Ciresi some questions about the Auerbach smoking dog study. Do you remember that?
A. Yes, sir, I do.
Q. And you were shown a number of exhibits, including Exhibit 18325, The Tobacco Institute release concerning the Auerbach smoking dog study. Do you remember that?
A. Yes, sir, I do.
Q. Now let me ask you a couple questions about this.
To your knowledge, has any scientist ever been able to replicate the results of the Auerbach smoking dog study?
MR. CIRESI: Objection, no foundation.
MR. BLEAKLEY: Your Honor, --
THE COURT: You'll have to --
MR. BLEAKLEY: -- he was asked extensive questions about this and his understanding.
THE COURT: Well you'll have to lay a foundation for the question.
MR. BLEAKLEY: All right. Thank you.
BY MR. BLEAKLEY:
Q. Did The Tobacco Institute follow what was being

said in the medical and scientific literature about the Auerbach smoking dog study after it was published and when this press release came out?
A. I believe we did, sir.
Q. And did you follow, for example, what was said by the Surgeon General of the United States about

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

this study in the 1982 Surgeon General's report?
A. Yes, sir.
Q. And in the 1982 Surgeon General's report, did the Surgeon General of the United States endorse the Auerbach smoking dog study?
A. No, sir, he did not.
Q. And in the course of following the Auerbach smoking dog study, was the Tobacco Institute aware of whether or not any scientist has ever been able to replicate the results of that study?
MR. CIRESI: Still no foundation, Your Honor.
THE COURT: You'll have to lay further foundation.
BY MR. BLEAKLEY:
Q. Did you and The Tobacco Institute follow the medical literature in order to determine whether any other scientist was able to replicate that study?
A. We did.

Q. And did you find that any other medical scientist, any other scientist has ever been able to replicate that study?
A. To the best of my knowledge as a layman, I'd say that there's been no repeat or replication of this study.
MR. CIRESI: Move to strike, no foundation.
THE COURT: That answer will be stricken.
MR. BLEAKLEY: At this time, Your Honor, if it hasn't already been offered, I'd like to offer the 1982 Surgeon General's report which the parties have agreed can be admitted. I can't remember, frankly, whether it's already been placed in evidence or not.
THE COURT: I believe it is.
MR. BLEAKLEY: The 1982?
MR. CIRESI: Well, we've stipulated that they're all in evidence. This one was not designated to be used with this witness, but we have no objection to it, Your Honor.
THE COURT: It will be received.
Why don't we take a short recess at this time.
THE CLERK: Court stands in recess.
(Recess taken.)
THE CLERK: All rise. Court is again in session.

(Jury enters the courtroom.)
(Side-bar discussion as follows:)

(Side-bar discussion concluded.)
THE COURT: Before we continue with the testimony, members of the jury, I just want to

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

apprise you of the fact that next Monday is a -- I believe it's a legal holiday, and so that you have some advanced notice, you will not be required to be here for trial. That day will be spent -- devoted to legal motions by the parties, and the only ones that need be present are the attorneys. And those hearings will begin at 9:30 on Monday. So that when you make your plans, you can plan on a long weekend away from the case.

Go ahead, counsel.

MR. BLEAKLEY: Thank you, Your Honor.

Your Honor, at this time we would offer in evidence the 1982 Surgeon General's report, which is PYA000085.

MR. CIRESI: No objection, Your Honor.

THE COURT: That will be received into evidence.

BY MR. BLEAKLEY:

Q. I want to direct your attention, Mr. Merryman, to page 184 of the 1982 Surgeon General's report, Exhibit PYA000085, which is entitled "Inhalation Studies." Reads, "Ideally, a suspected carcinogen should be tested using the route of administration corresponding to the exposure of humans. The experimental induction of respiratory cancer with tobacco smoke is beset with major difficulties because of toxicity introduced by high carbon monoxide concentrations (generally 3.5 to 5 volume percent), and high levels of nicotine. Furthermore, laboratory animals are not willing to inhale aerosols very deeply and are especially reluctant to inhale tobacco smoke. Inhalation studies have been explored by training Rhesus monkeys and baboons to smoke cigarettes. This approach does not produce respiratory neoplasms because of insufficient exposure time and because of the tendency of the animals merely to puff rather than to inhale.

"Invasive and noninvasive bronchoalveolar tumors developed in several of 78 dogs that were trained to

smoke through a tracheostoma and that smoked cigarettes daily for about two and a half years. In a group of 24 dogs that smoked nonfilter cigarettes, 2 animals developed early invasive squamous-cell carcinoma in the bronchi. However, this observation has not been repeated so far."

Do you see that from the 1982 Surgeon General's report?

A. Yes, sir, I do.

Q. And you had seen this in the 1982 Surgeon General's report; is that right?

A. Yes, sir.

Q. And this followed the press release issued by The Tobacco Institute criticizing the Auerbach smoking dog study; is that right?

A. Yes, sir, that's correct.

http://legacy.library.ucsf.edu/id/ggm35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

MR. BLEAKLEY: I have no further questions, Your Honor.

RE-ADVERSE EXAMINATION

BY MR. CIRESI:

Q. Good morning, Mr. Merryman.
A. Good morning, sir.
Q. How are you today?
A. Fine, sir. And you?
Q. Good. Good. I'm fine, thank you.
Can we go back to the Surgeon General's report that you were just looking at. Mr. Bleakley directed your attention to the portion of the report which says, "However, this observation has not been repeated so far." Correct?
A. Correct, sir.
Q. Now what was being reported there in the Surgeon General's report was that the specific test that was conducted by Drs. Hammond and Auerbach had not been repeated; correct?
A. I believe that's correct.
Q. But of course the Attorney General pointed out all kinds of inhalation studies that had been completed in other animals in that section of the report; did they not?
A. The Surgeon General? Yes, sir.
Q. Yes.
And in that portion of the report it was

disclosed that other animal studies showed the development of precancerous and cancerous conditions; didn't it?
A. There were reports -- there were summaries of other reports, yes, sir.
Q. And do you know if American Tobacco or Philip Morris provided their information that they had from the Auerbach-Hammond report to the Surgeon General?
A. I don't know what the companies may have provided to the Surgeon General, no, sir.
Q. Sir, there is no reference in the Surgeon General's report that the internal information of the companies was provided; is there?
A. Not that I'm aware of, no, sir.
Q. And when you read it, you didn't see any reference to the fact that the companies provided their internal information to the Surgeon General; did you?
A. I have not seen that, no, sir.
Q. And sir, if you go to -- I think it may be volume one -- or it may be volume two of the

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

documents I gave you, it's Exhibit 21905. You'll see it on the outside. It would be volume two, sir.
A. I think I have it. 21905?
Q. Correct.

A. Yes.
Q. That's the Gallaher study; correct?
A. It is a document from Gallaher Limited, yes, sir.
Q. The one we looked at yesterday; correct?
A. It is.
Q. And can you direct your attention to page four. You'll recall we looked at that yesterday; did we not?
A. We did, yes, sir.
Q. In the last paragraph in this document of Gallaher, which went to American Tobacco, it's reported that there are other experimental studies going on, run by several independent research laboratories; isn't that right?
A. It does make reference to other ongoing work, yes, sir.
Q. And each one of which was of a very high caliber; correct?
A. That's the view of the author of this document, yes, sir.
Q. Now did The American Tobacco Company or Philip Morris report that to the Surgeon General, if you know?
A. I don't know, sir.

Q. You didn't see any reference to it when you read the Surgeon General's report; did you?
A. No, I did not.
Q. You really didn't read the Surgeon General's report; did you, sir?
A. I read many of the Surgeon General's reports, yes, sir.
Q. Did you read that Surgeon General's report though?
A. I did.
Q. Let me ask you this: Did you read that section or was it pointed out to you by your lawyers?
A. Both, sir.
Q. And when it was pointed out by your lawyers, you read it; is that right?
A. I read it, yes, sir. I read it previous to that as well.
Q. What other part of the Surgeon General report of 1992 did you read?
A. Did you say '92, sir?
Q. Excuse me, '82.
A. When the report first came out I recall reading several portions of it, sir.
Q. How did you know which portions to read and which ones not to read?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. I skimmed through it and read extensively those portions which seemed to interest me at the time.
Q. Why did the smoke inhalation section interest you at the time?
A. I don't recall that that specific section interested me at the time, sir.
Q. Well that's the one that you pointed out here today that you had read; isn't that right?
A. Yes, sir.
Q. Is the first time you read it when it was pointed out to you by counsel or --
A. No, sir.
A. -- back in 1982?
A. No, sir. I certainly was aware of it in 1982.
Q. That wasn't my question. Did you read it in 1982?
A. Yes, sir.
Q. Okay. Then what drew your attention to that section?
A. I simply was interested in it. I don't happen to recall the reasoning why I was interested in it.
Q. Isn't it fair to state you wanted to know whether there were biological tests going on in which cancer was being developed as a result of cigarette smoke, that's why you read it?

A. As I said, sir, I don't recall specifically why I read it in 1982.
Q. That's what the section is about; isn't it, Mr. Merryman?
A. That's what part --
That's what that section of the report is about, yes, sir.
Q. Then isn't it fair for an objective person, judging your testimony, to conclude that the reason you read it is because you wanted to know whether there were studies being conducted on animals which showed that cancer was being developed as a result of cigarette smoke? Isn't that reasonable to conclude?
MR. BLEAKLEY: Objection, Your Honor, that's argumentative.
THE COURT: It is argumentative.
Q. Sir, isn't that the reason you read it, because you wanted to know whether or not animal studies were being done which would show the development of cancer as a result of exposure to cigarette smoke?
A. I can't honestly sit here today and tell you why I may have read something in 1982, sir.
Q. But you will agree that that's all that that section is directed to; isn't that right?
A. Yes, sir.

Q. Now the tobacco companies conducted other in-house studies; didn't they?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. I assume that the tobacco companies do in-house research, sir.

MR. CIRESI: May I approach, Your Honor?

(Document handed to the witness.)

MR. BLEAKLEY: Do we know what exhibit is being used?

(Document handed to Mr. Bleakley.)

BY MR. CIRESI:

Q. Now sir, I've handed you a document which is marked 10465, it's dated December 15th, 1969, it's an R. J. Reynolds document, carbon copies to Osdene and Wakeham, it's from Mr. Carpenter from a Mr. Weissbecker.

Have you seen this document before?

A. No, sir.

MR. CIRESI: Your Honor, we'd offer Exhibit 10465.

MR. BLEAKLEY: I'm advised by counsel, Your Honor, that this is not an R. J. Reynolds document.

MR. CIRESI: Well --

MR. BLEAKLEY: And therefore we object to the receipt of the document on the grounds of lack of foundation.

MR. CIRESI: Your Honor, it's recross. They did not advise us of the Surgeon General's report, they did not advise us of another document that was used. This is recross, and it was opened up by his testimony with regard to the Surgeon General's report. And I think I misspoke and said it was an RJR document; it's a Philip Morris document.

THE COURT: Well, I would intend to allow its introduction if I could read what it said. The second page that I have is backwards, reversed, and upside down.

MR. CIRESI: I'm -- I'm only offering the first page, Your Honor.

(Laughter.)

MR. CIRESI: Mine is similar to yours, and I will remove the second page.

THE COURT: I'll feel much more comfortable then.

MR. CIRESI: Which I believe, Your Honor, is just the same as the first page, but when we copied it at the break, it was reversed.

THE COURT: All right. Court will receive 10465.

And I should also mention yesterday that the defendant did introduce Exhibit A2008005, and the

record should show that that has been received into evidence.

MR. WEBER: I think that was AZ, Your Honor.

THE COURT: I'm sorry, AZ, right.

MR. WEBER: Thank you.

THE COURT: Okay.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

BY MR. CIRESI:
Q. Now sir, you have Exhibit 10465 in front of you?
A. Yes, sir, I do.
Q. And does this report "RJR's Biological Research Program," a Philip Morris document?
A. That's the title of it, yes, sir, "RJR's Biological Research Program."
MR. BLEAKLEY: Objection, Your Honor, the document does not say it's a Philip Morris document. I object to Mr. Ciresi characterizing a document.
MR. CIRESI: Well, Your Honor, this document was produced out of Philip Morris's files.
THE COURT: All right.
MR. CIRESI: Bears their number.
THE COURT: You'll have to rephrase your question, though, counsel.
BY MR. CIRESI:
Q. I want you to assume it's a Philip Morris

document. Can you do that, sir?
A. All right, sir.
Q. And you know that Dr. Osdene and Dr. Wakeham are Philip Morris employees?
A. I believe they were, yes, sir.
Q. And do you know if Mr. Carpenter and Mr. Weissbecker were Philip Morris employees?
A. Those names are not familiar to me, sir.
Q. Now do you see here that it's reporting that Mr. Weissbecker met with Dr. Price from R. J. Reynolds at a CTR-USA meeting on December 11th and 12th?
A. Yes, sir.
Q. And do you see that he's reporting that Dr. Price had mentioned doing chronic cigarette smoke exposure studies with rats?
A. I see that.
Q. And you see that he then reports what the nature of the study was, with the animals receiving up to 500 cigarettes, and emphysema was produced?
A. That's what he says.
Q. And do you see that Dr. Price was also expressing an interest in nicotine pharmacology and that his work was integrating with their packaging toxicity work?
A. I see that, yes, sir.

Q. And do you see that he was also -- they hired the wife of an instructor from the Bowman Gray School of Medicine, and that she was doing research with lung macrophages?
A. I see that.
Q. And do you see that Dr. Price reported that he was interested in learning about the gas chromatographic profile of cigarette smoke within animal exposure chambers?
A. That's what's in the bottom, yes, sir.
Q. And an animal exposure chamber is a lung; correct?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. I don't know, sir.
Q. And do you know, sir, that when Philip Morris found out about this, their CEO called RJR's CEO and demanded that this be shut down because it was in violation of an agreement between the companies that they would not do in-house biological research?
MR. BLEAKLEY: Objection, Your Honor, that's argumentative, beyond the scope of direct, beyond the scope of cross.
THE COURT: It's -- I don't believe it's argumentative, but it is beyond the scope.
MR. CIRESI: Well Your Honor, they were talking about biological research, and that's why

I've addressed this issue.
THE COURT: The last question is beyond the scope, counsel.
BY MR. CIRESI:
Q. Are you aware of whether the companies were doing in-house biological research?
MR. BLEAKLEY: It's been asked and answered several times in this testimony before, Your Honor.
THE COURT: You can answer that.
A. No, sir, I'm not.
Q. Were you aware of an issue relating to the Mouse House at Philip -- or at R. J. Reynolds?
A. I've heard of that in litigation, sir, but that's all.
Q. You've read about it in the papers; haven't you?
MR. BLEAKLEY: Your Honor, this is beyond the scope of Mr. -- my examination and Mr. Ciresi's examination.
THE COURT: No, I think -- I think this is -- I think this is the area that you opened up on.
MR. BLEAKLEY: No, Your Honor. I was -- my -- what I opened up --
THE COURT: Counsel --
MR. BLEAKLEY: -- was the Auerbach smoking dog study.

THE COURT: Counsel, I think what was opened up was the experiment on animals, and I'm going to allow it.
MR. CIRESI: Can I have the question back, please?
(Record read by the court reporter.)
A. I don't recall if I've read about it in the newspapers.
Q. But you have an awareness of that issue; don't you?
A. Vague and general, yes, sir.
Q. And your vague and general awareness is that Philip Morris demanded that RJR shut down the in-house biological research because it was contrary to an agreement not to do such research; isn't that right, sir?
MR. BLEAKLEY: Objection, Your Honor, it's

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

beyond the scope and it's argumentative.
THE COURT: It is beyond the scope.
Sustained.
Q. Do you know if RJR shut down any biological research that they were doing in 1970?
MR. BLEAKLEY: Same objection, Your Honor.
THE COURT: Sustained.
BY MR. CIRESI:

Q. Now sir, you talked about the efforts on the part of The Tobacco Institute, and I forget the exhibit number, two --
MR. CIRESI: Do you have the demonstrative exhibit number, counsel?
MR. BLEAKLEY: It's 2803, I think.
MR. CIRESI: 2803.
Q. 2803. Do you remember which one it was, sir?
A. Yes, sir.
Q. Now what you were saying, as I take it, is that you were going out and speaking on behalf of The Tobacco Institute with regard to children smoking; is that right?
A. My personal appearances were part of a much larger program, yes, sir.
Q. And you've told us about Exhibit 341, which was part of the literature that went out; is that right?
A. Which one was that, sir?
Q. Defendants' Exhibit 341. It would be in the defendants' book.
A. Yes, sir.
Q. You recall all those exhibits. Helping Youth Say No, Exhibit 3227, remember that one?
A. Yes, sir.
Q. Helping Youth Decide, the last three numbers

were Exhibit 233, you remember that?
A. I do.
Q. You remember the scope and activities of The Tobacco Institute, remember that exhibit?
A. I do, sir.
Q. And then you remember your speech which was Exhibit 531?
A. Yes, sir, I remember that.
Q. Okay. Now can you point the ladies and gentlemen of the jury to that portion of any of those exhibits where you tell people, particularly youth, that smoking is addictive?
A. I don't believe there's any reference in those documents to that, sir.
Q. Can you point where in any of those documents you tell youth that smoking causes diseases such as cancer, emphysema, et cetera? Where do you say that here?
A. I don't believe there's any such reference to that in those documents, sir.
Q. Can you tell us where in any of these documents you say that the tobacco companies manipulate

http://legacy.library.ucsf.edu/tid/gom35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

nicotine in order to addict people?
A. There is nothing in those documents that has to do with nicotine, sir. That's not the purpose of

those documents.
Q. The purpose was to educate youth; wasn't it?
A. The purpose of the brochures that we distributed was to assist parents in helping youngsters to avoid bad decisions.
Q. So these were directed to parents; is that right?
A. Those brochures were certainly directed to parents and others who had regular contact with youngsters, yes, sir.
Q. Where do you tell the parents, then, that nicotine is addictive in those documents?
A. There is no place in those documents where such a statement appears, sir.
Q. Where do you tell them that you manipulate nicotine?
A. That's not in there.
Q. Where do you tell them that the cigarette is a drug-delivery device?
A. Certainly I wouldn't expect that to be there either, sir.
Q. Where do you tell the parents that cigarette smoking causes lung cancer, emphysema, larynx cancer, et cetera? Where do you say that?
A. That's not there because we weren't attempting

to give people a health-education message, we were attempting to give parents and others who work with youngsters some good, solid ideas on how to help kids avoid bad decisions and help them avoid peer pressure.
Q. You weren't attempting to tell them about health issues; is that right? Is that what you said?
A. It was the information we had that the American public and even youngsters, according to the Surgeon General, believed that smoking was hazardous to health.
Q. That's not what I asked you.
You weren't --
A. You were --
Q. You weren't trying to tell them about health issues; were you, sir?
A. No, the -- the purpose of those -- of those brochures, those booklets, was to give parents the information on how they could help their kids make better decisions growing up, whether it was cigarettes or drinking or drugs or other things that they might encounter.
Q. Is your answer no? You weren't trying to tell them about health issues; were you?
A. No, that wasn't the purposes of those brochures.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. So your answer is no; is that right?
A. That's correct.
Q. So you weren't in those documents discharging your responsibility of accepting an interest in people's health as a basic responsibility, paramount to every other consideration in our business; is that right? You weren't doing that in those documents; were you, sir?
A. The documents were not meant to address health concerns. We thought that those documents could be better used -- those brochures could be better used to give parents useful information on how to guide their kids.
Q. And sir, the fact is the amount of money spent promoting and marketing the cigarettes vastly exceeded what was spent on any of these programs; didn't it?
A. As I -- as I said before, I believe in response to your line of questioning on that issue, I haven't added up what the marketing budgets were for the tobacco companies in any combination of years.
Q. Well let's take a look at some of them. Turn to Exhibit 20177.
THE REPORTER: 20177?
MR. CIRESI: Correct. 20177. Let me hand

up copies of it for you, sir.
May I approach, Your Honor?
(Document handed to the witness.)
THE WITNESS: Thanks.
MR. CIRESI: You're welcome.
MR. CIRESI: Your Honor, we'd offer Exhibit 20177. They are three demonstrative exhibits -- excuse me, three summaries pursuant to 1006, based on interrogatory answers provided by the defendants under oath in this case.
MR. BLEAKLEY: I'm sorry. You were offering that?
MR. CIRESI: Yes.
MR. BLEAKLEY: No objection.
THE COURT: Court will receive 20177.
BY MR. CIRESI:
Q. Now the first exhibit, sir, is R. J. Reynolds. We'll also put it up on the screen.
Now this shows youth prevention expenditures, based on answers to interrogatories, by Philip Morris --
MR. CIRESI: I apologize for that.
Q. -- for the period 1983 to 1994. Do you see that?
A. I do.

Q. And during that period of time Philip Morris, in those eleven years, spent 15,914,336,845 dollars for advertising, marketing and promotion. Do you see

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

that?
A. Yes, sir.
Q. And what they spent -- that little sliver there is what they spent on youth prevention, 20,818,740 dollars. Do you see that?
A. Yes, I see it.
Q. Now as a communicator, one who is involved in TV, one who has communicated on behalf of the industry, you would admit that saturation through the devotion of resources has an impact; doesn't it, sir?
A. Yes, sir.
Q. And you would agree that there is a vast disparity over an eleven-year period between almost 16 billion dollars and a little bit under 21 million dollars; wouldn't you?
A. There is a difference in the figures. There's also a difference in what that money is spent for.
Q. And if it's spent for advertising, marketing and promoting, that's promoting, advertising and marketing of cigarettes; isn't it?
A. Yes. And as I understand it from the Federal Trade Commission reports, the vast majority of that

money is in coupons and -- and slotting allowances.
Q. You mean you give coupons, you give hats, jackets, other paraphernalia; isn't that right?
A. Well the coupons are generally for cents-off promotions. They're not --
Q. So --
A. They're not advertising as we might think of advertising in the usual sense.
Q. Well they're advertising according to Philip Morris in its sworn answers to interrogatories.
A. This is advertising, marketing and promoting.
Q. Right. And it is --
A. Coupons I don't think can be fairly regarded as advertising.
Q. And is it fair to state, sir, that children generally have less money than do adults?
A. I don't know if they do or not, but I suppose as a general proposition one could say that.
Q. Now let's take a look at what RJR did during that period of time.
Do you have the RJR up there, sir?
A. Yes.
Q. Now RJR, during the same period 1983 to 1994, spent 6,132,810,796 dollars on advertising, marketing and promotion; correct?

A. Yes, sir.
Q. And what they spent on youth prevention expenditures during that eleven-year period was 19,099,617 dollars; correct?
A. Yes, sir.
Q. Again, a vast disparity in resources; correct?
A. There is a difference in the numbers, yes, sir.
Q. Vast difference; isn't there, sir?

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

A. There -- there is a difference in the numbers.
Q. You wouldn't agree it's vast.
A. Certainly substantial. And I think there's good reasons for it.
Q. Now sir, let's take a look at Brown & Williamson during the same period of time. Do you have that there?
A. Yes, I do, sir.
Q. Now Brown & Williamson during that eleven-year period spent 4,995,213,427 dollars on advertising, marketing and promotion; correct?
A. Yes, sir.
Q. And what they spent on youth prevention was 642,805 dollars; correct?
A. That is correct.
Q. Again, a vast disparity between the two; correct, sir?

A. That certainly is a large disparity, yes, sir.
Q. Well let me use your definition. It's a substantial disparity; correct?
A. Certainly.
Q. Now during that same period of time, sir, The Tobacco Institute was fighting legislation in each and every state that would have prevented youth smoking; wasn't it?
A. I don't recall that we were fighting legislation that would have prevented youth smoking, sir.
Q. Can you direct your attention to Exhibit 14488. That's going to be in the larger book, sir, volume two.
Do you have it?
A. Yes, sir, I have it.
Q. This is a Tobacco Institute document; isn't it?
A. It appears to be.
Q. Mr. Mozingo is the senior vice-president for tobacco activities?
A. Mr. Mozingo, I believe at the time, was senior vice-president for state activities.
Q. Okay. And Mr. Brozek was a Minnesota Tobacco Institute operative; was he not?
A. I believe Mr. Brozek was regional vice-president. He wasn't based in Minnesota.

Q. Did he have Minnesota under his authority, sir?
A. I believe he did.
MR. CIRESI: Your Honor, we'd offer Exhibit 14488.
MR. BLEAKLEY: No objection.
THE COURT: Court will receive 14488.
BY MR. CIRESI:
Q. First of all, we see on the title page that it's to Mr. Mozingo from Mr. Brozek, and it's called "minnesota Legislative Status;" correct?
A. Yes, sir, it is.
Q. Now if I could direct your attention, first of all, to the "BACKGROUND" of this memorandum, I'd like

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

to read a part, then ask you some questions.
"Since January, as you know, the situation in Minnesota has become 'uncommonly active'. A raft of legislative issues in the form of taxation, regulation and prohibitions have found their way through the Minnesota legislative process. The 39-point Technical Advisory Committee Report on Non-smoking and Health, introduced in November, held the promise of 39 separate legislative proposals to be advanced through both houses. This report, a revolutionary attack on our industry, was championed not only by anti-industry organizations, but also the

strong direct lobbying of the Minnesota Department of Health. The ink was not yet dry on this report before our lobbyists initiated an aggressive and focused effort in communication with legislative leadership and targeted key legislative activities. This effort was successful in preventing a majority of the report from seeing its way from the drafting board to the legislators' hands."
Now did I read that correctly?
A. You did.
Q. And sir, in 1985, while you were a member of The Tobacco Institute, an aggressive campaign was instituted by the industry to kill bills in the Minnesota legislature which would have prevented youth smoking; isn't that right, sir?
A. That's not what this document says, no, sir.
Q. It doesn't say that. Well let's go through the document and see if it does or doesn't.
Do you know if it was directed to killing bills which would have funded health-related expenses caused by smoking?
A. I'd have to read the document, sir, in order to tell you what it says. I have not done that.
Q. You've never seen this before?
A. I don't frankly recall if I've seen it or not.

Q. It was one of the ones that we gave notice to the other side that would be used in your examination; wasn't it?
MR. BLEAKLEY: Your Honor, it doesn't make any difference whether it was one. The question is did he see it or didn't he see it.
THE COURT: Well that's a proper question. He can answer that.
MR. BLEAKLEY: Well it's -- it suggests somehow that there was an obligation on the part of us to show him every document they identified as an exhibit, and there is no such obligation.
THE COURT: Counsel, it does suggest that there's no surprise.
MR. CIRESI: Can you answer the question?
THE WITNESS: I'd appreciate if I could hear the question again.
Q. Was it one that was provided to counsel so you

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

would have an opportunity to look at it?
A. Apparently. It has an exhibit number on it.
Q. And you did look at documents that we gave notice that we were going to be using with you during your testimony; correct?
A. I was able to look at some of them, yes, sir.
Q. Okay. Were you able to look at this one?

A. I don't recall that I did.
Q. Now can you go to the second page, and do you see there there's a "STATUS" section?
A. Yes, sir, there is.
Q. It refers to Senate File 38, SF 38?
A. Yes, sir.
Q. And do you see that there's language in that bill which was proposing increasing excise taxes, earmarking those revenues for the state medical assistance fund, that language contained in the legislation referred to tobacco-related illnesses?
A. That's what it says.
Q. And do you see down below legislative program action notes with regard to what the industry was attempting to do with that bill?
A. Yes, sir, that's what it says.
Q. And it said "Efforts are continuing to kill this bill in committee;" is that correct?
A. That's what it says.
Q. And down below that, the legislative support/action notes, does it say the "Tobacco Institute legislative counsels have been working closely with one of two wholesaler organizations on this particular bill. A more subtle and less bombastic approach has been utilized in order to

prevent an overemphasis by Twin Cities media. No further support group assistance is requested at this time." Do you see that?
A. I see that.
Q. And The Tobacco Institute, as part of its strategy to kill legislation relating to smoking and health, utilizes other organizations and pays them money for it; doesn't it?
A. We certainly have allies in legislative confrontations, yes, sir.
Q. And you pay them money to be your ally; don't you?
A. I think that's an improper characterization.
Q. Well, does money exchange --
Do you give them funds? I don't want to mischaracterize it for you, Mr. Merryman. Does money flow from the tobacco industry to these allies?
A. Well you're really beyond my area of expertise as someone who's involved in -- as a spokesman for the industry. That is an administrative area that I don't have any information on.
Q. Are you saying that as you sit here on the witness stand under oath, you don't know if money

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

flows from the industry to your allies to help defeat legislation? Are you saying that?

A. I don't have personal knowledge of that kind of thing. I'm not involved in the state activities division, I'm not an administrator of The Tobacco Institute. I don't know what may or may not occur with respect to that kind of thing that you're referring to.
Q. Well you've heard that during your 21 career -- 21-year career at The Tobacco Institute; haven't you?
A. Oh, this isn't the first time I've heard somebody say something like that.
Q. And you've heard it from people in The Tobacco Institute, that money is paid to your allies to help defeat legislation; haven't you?
A. I don't recall.
Q. You don't deny that; do you?
A. If I don't recall it, I can't deny it.
Q. Now can you turn to the page which is numbered five at the top. Now, do you see the bill referenced, Senate File 776, House File 810?
A. Yes, I do.
Q. And in the Senate it was being sponsored by Senator Nelson from Austin, a member of the DFL party?
A. Yes, sir.
Q. And in the House it was being sponsored by

Representative Quist, a member of the Republican Party, and he's from St. Peter?
A. That's what it says.
Q. Okay. I want to read this and ask you some questions about it. "This is Governor Perpich's priority legislation. Bill would increase cigarette tax by 15 cents per pack in order to segregate revenues for youth education, community 'stop smoking' programs, work place initiatives, sampling ban, advertising bans," and then "sewer construction, mosquito control" -- we have a lot of those here -- "and general mischief." Do you see that?
A. Yes, I see that.
Q. Now I -- I don't want to imply that the general mischief relates to the tobacco industry. I'm not saying that. Do you understand that?
A. I'm sure you wouldn't.
Q. Now with regard to the youth education, community stop smoking programs, work place initiatives, sampling bans, advertising bans, The Tobacco Institute worked to defeat that measure; didn't it?
A. The document speaks for itself in that regard.
Q. It says right there in the next paragraph, "It is at the Finance Committee level that we hope to

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

defeat this measure." Is that right?
A. That's what it says.
Q. Now when you were putting out these small sums of money over eleven years for youth prevention, did you tell the parents that you were at the same time working to defeat legislation that would prevent kids from smoking? Did you tell them that?
A. We didn't tell people what our legislative agenda was. Certainly if someone had asked what our position on this bill was, I'm sure we would have told them.
Q. Sir, would you agree with me that actions speak louder than words?
A. As a general proposition I'd say so, yes, sir.
Q. So you didn't tell people that your actions were to defeat youth prevention programs, but your words were that you had a policy that you didn't want kids to smoke; didn't you?
A. Certainly our policy with respect to kids and smoking extended to supporting legislation which we thought would do just that, sir.
Q. You didn't tell them what I just asked you; did you?
A. We didn't tell anyone that I recall that we opposed this particular piece of legislation.

However, if someone had asked, we'd have been happy to tell them.
Q. Now in this memo -- strike that.
If they would have asked, you would have been happy to tell them; is that right?
A. If a reporter asks for our position on a piece of legislation, we'd certainly tell him.
Q. So that if a reporter or if a federal regulatory agency or if anyone, a lawyer asks for your internal documents which show what the companies really knew and when they knew it, you'd be happy to give it to them; is that right?
A. I can't provide anyone with company internal documents, sir.
Q. And of course the companies don't provide them; do they?
A. That's up to them, sir. I don't know what they do.
Q. Now you remember --
You've heard of Winston Churchill; haven't you?
A. Yes, sir.
Q. You remember during World War II he said, "We're going to fight them on the beaches, we're going to fight them in the hills?" You remember that?
A. Yes, sir.

Q. That's how this campaign of The Tobacco Institute was characterized by your own Tobacco Institute; wasn't it?
A. I don't recall that, sir.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Q. Well they used words to that effect; isn't that right?
A. It's possible. I don't remember specifically.
Q. Why don't you turn to the very last page, page nine, "CONCLUSION." I'll just read it to you.
"Every possible legislative, political, social and theoretical angle is being utilized in our efforts to get out of this session unscathed. Since Minnesota has seen fit to designate itself, as Surgeon General Koop stated, quote, a model for the country, end of quote, with regard to anti-smoking legislation, our only choice in this matter is a complete victory. Anything less could be used against us in other states. We will employ all means to secure that victory."
Your words, not mine; correct, sir?
A. Not my words, no, sir.
Q. The Tobacco Institute's words, not mine; correct?
A. An employee of the Institute in his report, yes, sir.

Q. Did you ever see any document which refuted Mr. Brozek and said "That's not our policy. That's not what we do?" Did you ever see any such document?
A. No, sir.
Q. Did the lawyers ever show you any such document?
A. No, not that I recall.
Q. And sir, you yourself are aware with regard to the health risks of smoking and what smoking causes that 91 percent of scientists who have done work for the industry believe that most lung cancer deaths are caused by smoking; isn't that right?
A. I'm aware of a survey that was reported on that subject, but I don't remember the specifics of it.
Q. And when you were faced with that, you yourself, you stated "The Tobacco Institute has long said that smoking is a risk factor associated with a variety of diseases. We don't know whether smoking causes disease." Isn't that what you said?
A. I believe I was quoted as having said that in a newspaper article.
Q. And in newspaper articles that ran right here in Minnesota; isn't that right?
A. I'm sorry, I don't know where it ran. But if -- if it was nationally distributed, it may have.
Q. That was your intent, to have it nationally

distributed and run here; isn't that right?
A. Well I responded to a reporter's inquiry. My only intent was to provide him with answers to his questions, if I could.
Q. Your intent was to provide him with the stated policy of the Institute; isn't that right?
A. Certainly, in answer to his questions.
Q. And you were doing that in 1991. You didn't stop doing that in the '80s or '70s; did you?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. In response to inquiries from reporters, we'll try to answer their questions, yes, sir.
Q. Can you turn to Exhibit 18799, which is a Minneapolis Star Tribune article of June 26th, 1991.
A. Which volume is that, Mr. Ciresi?
Q. It would be volume two, I believe.
A. Is it?
Q. It is volume two, sir.
A. All right.
All right, yes, sir.
Q. Do you have that?
A. Yes, I do.
Q. It's an article that was in the Minneapolis Tribune; correct?
A. Yes, sir.
Q. You're quoted in it?

A. I am.
MR. CIRESI: Your Honor, we'd offer Exhibit 18799.
MR. BLEAKLEY: Your Honor, I have no objection to the introduction of the quote of Mr. Merryman. The rest of this document is hearsay, however, so I do object to its receipt.
THE COURT: Court will receive 18799.
BY MR. CIRESI:
Q. First of all, the title is "Scientists Funded By Tobacco Say Smoking Is Harmful." Correct?
A. That's what it says, yes, sir.
Q. And you recall you had to respond to this on behalf of the tobacco industry; isn't that right?
A. I responded to a reporter's inquiry about this issue, yes, sir.
Q. And you delivered your response to your media contact people too; didn't you?
A. I don't know what you mean, sir.
Q. Well you've got a news release distribution list for The Tobacco Institute. It's got just all kinds of contacts throughout the country. Don't you?
A. Yes, sir.
Q. You use that when you release statements; don't you?

A. If we have a prepared news release, we sometimes will use that distribution list you have in hand.
Q. And --
A. We may use a portion of it, we may use only a few.
Q. And you used this distribution list for this statement; didn't you, sir?
A. No, sir. It's my recollection that I responded to an inquiry from a report from the Associated Press, and I don't recall that we made a distribution of a -- of a written statement.
Q. Do you deny that you made a distribution of a written statement concerning this subject matter in 1991?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

A. I don't recall it.
Q. You just don't remember.
A. This -- this, obviously, is my response to the Associated Press reporter's telephone call.
Q. Okay.
A. I don't recall any additional distribution we made.
Q. And what you were responding to was a survey that had been conducted by scientists who got research money from The Tobacco Institute; is that right?

A. No, sir, that's not true at all.
Q. You weren't. Well you -- you are aware of the survey that was published in the American Journal of Public Health; correct?
A. I'm aware of that survey, yes, sir.
Q. And in that survey, 94 percent of those scientists that were funded by the industry agreed that secondhand smoke was harmful to non-smokers; correct?
A. That is correct.
Q. And 91 percent agreed that most lung cancer deaths are caused by smoking; is that right?
A. That's what it says.
Q. Would you agree the 91 percent is a consensus?
MR. BLEAKLEY: That's argumentative, Your Honor. Objection.
THE COURT: No, you may answer that.
A. May represent a consensus of the people that were surveyed.
Q. Do you consider it a consensus?
A. Of those who were asked, it seems like it would be.
Q. Okay. And those were people that were funded by tobacco money to do some research; isn't that right?
A. As I recall, the funding came from The Council

for Tobacco Research. My response was to a reporter's question on the smoking-and-health issue, not the survey or funding sources themselves.
Q. Well The Council for Tobacco Research, which was formerly known as TIRC, was funded by the tobacco industry; was it not?
A. It's tobacco --
It's funded by the tobacco industry. It is entirely separate from The Tobacco Institute, however.
Q. I didn't ask you if it was separate from The Tobacco Institute. It's funded by the tobacco industry; correct?
A. It's funded by the companies.
I don't respond to things on behalf of The Council for Tobacco Research, however.
Q. And the Tobacco -- TIRC, which became the CTR, was one of the entities that was visited by the three Englishmen back in 1958; isn't that right?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. I believe that was on the itinerary.
Q. In fact they had three separate meetings with the TIRC; didn't they?
A. That I don't recall, sir.
Q. Now in this article -- and you said this in 1991 -- "'The Tobacco Institute has long said that

smoking is a risk factor associated with a variety of diseases,' said Walker Merryman, vice-president of the group that represents the tobacco industry. 'However,' he said, 'we don't know whether smoking causes disease.'" Is that right?
A. Yes, sir.
Q. And you've been saying that in the paper which has been published here in Minnesota ever since you have been a representative of The Tobacco Institute; haven't you?
A. I do respond to reporters' inquiries on the subject, yes, sir, where appropriate.
Q. Now when you met with Mr. Skubic at the Minnesota Department of Health, did you tell him that you were -- not you personally, but that the industry was attempting to kill the bills that were in front of the legislature? Did you tell him that?
A. No, sir. Mr. Skubic, I'm sure, was aware of the fact that we had contract lobbyists in Minnesota.
Q. Did you tell him that smoking was addictive?
A. No, sir.
Q. Did you tell him that the defendants were manipulating nicotine?
A. No, sir.
Q. Did you tell him that cigarette smoking causes

disease and death?
A. No, sir, that wasn't the purpose of my visit.
Q. The purpose of your visit was to impart knowledge that the companies had regarding smoking and health; wasn't it?
A. The purpose of my visit was to acquaint him with a project that we had underway having to do with discouraging youth smoking.
Q. Well, part of discouraging youth smoking would be to advise them, fully inform them or their parents of what the companies know about the risks of smoking; wouldn't you agree?
A. No, I don't believe so, sir.
Q. I didn't think you would.
MR. CIRESI: Thank you, sir. I have no further questions.
THE COURT: We'll recess for lunch, reconvene at 1:35.
THE CLERK: Court stands in recess to reconvene at 1:35.
(Recess taken.)

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

AFTERNOON SESSION.

THE CLERK: All rise. Court is again in session.

(Jury enters the courtroom.)

THE CLERK: Please be seated.

THE COURT: Counsel.

MR. HAMLIN: Good afternoon, Your Honor.

THE COURT: Good afternoon.

MR. HAMLIN: Good afternoon.

(Collective "Good afternoon.")

THE CLERK: Mr. Samet, please rise.

(Witness sworn.)

THE CLERK: Please state your name for the record.

THE WITNESS: My name is Jonathan Michael Samet.

THE CLERK: Thank you. Please have a seat.

MR. HAMLIN: At this time, Your Honor, plaintiffs call Dr. Jonathan Michael Samet.

JONATHAN M. SAMET

called as a witness, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HAMLIN:

Q. Good afternoon, Mr. Samet.

A. Good afternoon, Mr. Hamlin.

Q. My name is Tom Hamlin. I'm one of the attorneys for the state of Minnesota and Blue Cross Blue Shield of Minnesota.

Dr. Samet, what is your current position?

A. I'm currently professor and chair of the Department of Epidemiology of the Johns Hopkins University School of Hygiene and Public Health.

Q. And do you also have an appointment at the Oncology Center at the Department of Medicine at Johns Hopkins?

A. That's right. I also hold appointments in the Oncology Center or the Cancer Center and the Department of Medicine.

Q. Doctor, you are a physician and an epidemiologist; is that correct?

A. That's correct.

Q. How long have you been at Johns Hopkins?

A. Since August -- well August of 1994.

Q. Doctor, can you briefly tell the ladies and gentlemen of the jury and the court what epidemiology is?

A. Epidemiology is a science to study methods that we use to identify the causes of disease in

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

populations, to know what affects people's health. It's studies that are done directly involving people.
Q. Doctor, could you tell us a little bit about the Johns Hopkins School of Public Health.
A. The School of Public Health is actually the oldest school of public health in the world, and at the moment the world's largest school of public health.
Q. Where is it located?
A. In Baltimore.
Q. Now as chair, do you have the following duties: Do you teach?
A. Yes.
Q. And what subjects do you teach?
A. I teach a variety of subjects in epidemiology, some on the methods of the field itself, introduction to epidemiology, more advanced methods. I also give classes on cancer epidemiology, environmental effects on epidemiology and public policy, clinical research and other -- other matters.
Q. And you also have the administrative responsibility of running the department; is that right?
A. That's correct.
Q. How many faculty members do you supervise?

A. I have over 40 faculty in the department at present.
Q. Could you tell us something about the research activities in the department.
A. We have a large department and very diverse research activities going on really throughout the world. We have major programs on infectious diseases in Africa, Thailand, Baltimore, studying, among other things aids, we have programs on cardiovascular disease, on respiratory diseases, on sleep and many other problems, all this going on through the department.
Q. And you also do your own research and writing; is that right, doctor?
A. That's correct.
Q. I'd like to go over your educational background. You received your B.S. in physics and chemistry at Harvard in 1966; is that right?
A. That's correct. Actually a bachelor of arts.
Q. And you received your medical degree from the University of Rochester in 1970; is that right?
A. That's correct.
Q. And you received a master's of science in epidemiology from the Harvard School of Public Health in 1977; is that right?

A. That's -- that's correct.
Q. You are licensed to practice as a physician in Maryland; is that right?
A. That's correct.
Q. And you are also licensed to practice in New

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Mexico; correct?
A. That's correct.
Q. Following graduation from medical school, you took an internship at the University of Kentucky in internal medicine from 1970 to 1971; is that right?
A. That's correct.
Q. And in that internship, did you have extensive experience in treating patients with lung cancer?
A. Yes, I did.
Q. And did you also treat people with chronic obstructive pulmonary disease?
A. I took care of many patients with that disorder.
Q. From 1971 to 1973 you were in the United States Army; is that right?
A. That's correct.
Q. You were a physician in the Army?
A. Correct.
Q. And you were stationed in Panama?
A. Yes.
Q. And did you practice as an anesthesiologist?

A. That's right, I was an anesthesiologist for a 450-bed hospital.
Q. And from 1973 to 1975 did you complete your internal medicine residency?
A. Yes, I did, at the University of New Mexico.
Q. All right. And were you responsible for patient care at that time?
A. That's what a resident does. I was very busy.
Q. Okay. And did you treat patients with a variety of diseases?
A. Yes.
Q. And did those diseases include lung cancer?
A. Yes.
Q. And chronic obstructive pulmonary disease?
A. Yes.
Q. Heart disease?
A. Yes.
Q. Other kinds of cancer?
A. Yes.
Q. And other types of diseases; right?
A. Yes.
Q. From 1975 to 1978, did you have a fellowship in Boston?
A. Yes. I was at Harvard Medical School.
Q. And at that --

That's when you obtained your master's in epidemiology; is that right?
A. Correct.
Q. And did you also develop a subspecialty in pulmonary disease?
A. Yes.
Q. And did you do work at the Peter Bent Brigham Hospital?
A. Yes.
Q. You also practiced at Massachusetts General; is

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/rqhd0001

that right?
A. That was another site of my clinical fellowship, yes.
Q. You also practiced at Boston City Hospital; right?
A. Correct.
Q. And again, you were treating patients; right?
A. Correct.
Q. And some of those patients had lung cancer; correct?
A. Yes.
Q. And COPD?
A. Yes.
Q. Chronic obstructive pulmonary disease.
And other kinds of cancers; correct?

A. Yes.
Q. And other diseases.
A. Correct.
Q. In 1975 you passed your internal medicine board exam?
A. That is correct.
Q. And you passed your pulmonary disease board exam in 1980, right?
A. Yes.
Q. Now let me ask you about one of your teachers at the Harvard School of Public Health. You studied under Dr. Frank Speizer; is that right?
A. That's right. He was my mentor for my fellowship.
Q. All right. Now Dr. Speizer trained with Richard Doll; is that right?
A. Yes.
Q. Who is Richard Doll?
A. Richard Doll was one of the field's preeminent empidemiologists, a man now in his mid-80s who did much of the pioneering work on cigarette smoking and other diseases from the 1940s extending into the 1950s to the present.
Q. And we're going to be talking about Dr. Doll's work later in our testimony.

A. We'll be touching on some of his studies.
Q. And did Dr. Speizer also start the nurses health study?
A. Yes. He remains the principal investigator for this study.
Q. And is that a well-known and well-regarded prospective study of the disease of smoking?
A. It's a very important study, not only for smoking but for other diseases.
Q. Did Dr. Speizer win the Ochsner Award for research?
A. Dr. Speizer won the Ochsner Award for research contributions to -- to smoking and health.
Q. Is that a prestigious award?
A. Yes.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Q. Now did you do original research with Dr. Speizer?
A. Yes, during my years in Boston.
Q. And did that original research include research regarding smoking and disease?
A. Yes.
Q. Now I want to talk about your experience as a teacher and as a clinician.
In 1978 you took an appointment at the University of New Mexico School of Medicine in the

Department of Medicine; is that right?
A. Yes.
Q. And you had responsibilities for patient care, teaching, and research; correct?
A. Yes. Correct.
Q. So you --
Again, you treated patients; right?
A. That's correct. That was part of my duties in the Department of Medicine.
Q. Some of those patients had lung cancer; correct?
A. Yes.
Q. Some had chronic obstructive pulmonary disease; right?
A. Yes.
Q. And some had other kinds of cancers; right?
A. Correct.
Q. And other diseases; right?
A. Yes.
Q. Did you also work in a pulmonary clinic?
A. Yes, I had a weekly pulmonary clinic.
Q. Okay. And did you do in-hospital pulmonary care?
A. Yes. I provided consultation and in-hospital pulmonary care.
Q. Did you also cover a general medicine ward of

the hospital?
A. Periodically one of my duties was to supervise the team providing general medical care.
Q. In 1986 did you become chief of pulmonary medicine?
A. Yes.
Q. And later did that department become known as the Pulmonary and Critical Care Medicine Department?
A. That's right.
Q. And were you administratively responsible for a large clinical program in pulmonary and clinical care medicine from 1986 through 1994?
A. Yes, I was.
Q. And in 1994 you left for Johns Hopkins; right?
A. Correct.
Q. Now doctor, what other kinds of clinical experience have you had other than what we have already covered?
A. Over my years of being a physician I've had some other experiences. As a resident at the University

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

of New Mexico I took care of patients discharged from the University Hospital to nursing homes. Also over the years, particularly early in my career, I had a variety of experiences being in charge of providing emergency care in various settings.

Q. Doctor, I have your curriculum vitae here. I want to ask you a few questions about it.

Now it says that you were the author and editor of nine books and monographs, including a book entitled "The Epidemiology Of Lung Cancer" published in 1994; is that correct?

A. That's correct.

Q. You were also the author of 92 chapters; right?

A. Yes, I am.

Q. What does that mean, doctor?

A. Okay. A chapter is like a contribution to a textbook or a collection of papers on some special subject, so respiratory textbooks, general medicine textbooks, and others, for example.

Q. You were also the author of 173 peer-reviewed research articles; is that correct, doctor?

A. That's correct.

Q. Can you tell the ladies and gentlemen of the jury and the court what a peer-reviewed article is?

A. Okay. These are articles of original research where data has been gathered, collected, analyzed and written into a paper for publication in what we call the peer-reviewed literature, meaning that it's been sent to a journal, reviewers have decided that this work is acceptable for publication, it's advancing,

providing new knowledge. And that's what we mean by "peer review."

Q. You were also the author of and editor of 40 proceedings of meetings, is that correct, doctor?

A. That's correct.

Q. And you've also authored 74 case reports and editorials and other publications; right?

A. That's correct.

Q. And you have had 72 abstracts accepted for presentation; is that correct, doctor?

A. That's approximately correct, yes.

Q. Let me ask you about a couple of your peer-reviewed journal articles. Specifically there's a publication entitled "Respiratory Disease in a New Mexico Population Sample of Hispanic and Non-Hispanic Whites" published in 1982. Could you tell us a little bit about that study?

A. This is a study that I did shortly after going to New Mexico that was funded by some funds from the university and by the American Lung Association. It was a survey of approximately 1700 residents of Albuquerque, New Mexico, half Hispanic and half non-Hispanic, gaining information on smoking by this group, the respiratory symptoms that -- that they had, and also the respiratory diseases that they had

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

been diagnosed with.
Q. Next publication I want to ask you about, doctor, is one entitled "Cigarette Smoking and Lung Cancer in Hispanic Whites and Other Whites in New Mexico" published in 1985. Can you tell us about that particular report.
A. This was a study funded by the National Cancer Institute, a so-called case-control study. It was directed at the risks of smoking in the state. The intent was to try and understand why we had been observing somewhat lower rates of lung cancer in Hispanic residents of the state compared with non-Hispanic residents.
Q. And did that study generate a number of publications exploring smoking and lung cancer?
A. Yes, it did.
Q. Next publication I want to ask you about is entitled "Respiratory Diseases and Cigarette Smoking in a Hispanic Population in New Mexico" published in 1988. Would you tell us about that report.
A. This was another study in the population in New Mexico funded by the National Heart, Lung and Blood Institute, which is one of the National Institutes of Health. Here, this was a door-to-door study involving approximately 700 households, over 2,000

persons who we talked to about smoking and other risk factors for disease. We measured lung function and so forth. And this paper provides a description of the findings.
Q. Did you look at biomarkers in that study, doctor?
A. Yes, we did. We collected saliva for analysis of cotinine, a nicotine metabolite.
Q. What are biomarkers?
A. Biomarkers refer to compounds that we can measure in a body fluid, a tissue, air breathed out by people, and so forth.
Q. Next publication I want to ask you about is entitled "Lung Cancer Mortality and Exposure to Radon Progeny in a Cohort of New Mexico Underground Uranium Miners" published in 1991. Would you tell us about that study.
A. Well when I returned to New Mexico in 1978, the state was the site of the free world's largest uranium mining industry. There was a great deal of concern about the risks of radiation for the minors, so we undertook a large epidemiological study that's still going on, looking at the risks of radon. A component of that study was to try and understand how smoking and radon act together to cause lung cancer.

Q. And what were the conclusions of the study,

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

doctor?
A. Well one of the -- one of the findings of the study, unfortunately for the miners, was that in fact there were risks of radon with regard to lung cancer. We also found evidence of synergism in the combined effect of smoking and radon.
Q. Doctor, have you also been involved with national scientific committees on the subject of radon?
A. Yes.
Q. And are you involved with the National Research Council?
A. Yes.
Q. Now what -- what is the National Research Council, doctor?
A. The National Research Council is essentially the operating arm of the National Academy of Sciences, which was commissioned by Congress to provide guidance to the Congress on matters of science and policy.
Q. And are you a member of the committee known as The Biological Effects of Ionizing Radiation?
A. I've been a member of several such committees and currently chair the sixth such committee.

Q. The next publication I want to ask you about is entitled "Determinants of Survival in Older Cancer Patients" published in 1996. Could you tell us about that study.
A. Yeah. This study was one of a series --
This paper was one of a series of papers based on a National Cancer Institute-funded study on determinants of the outcome of cancer in older persons. We had enrolled a group of 800 persons newly diagnosed with cancer who were at least 65 years of age. We were initially interested in factors that influenced delay in both the patient's seeking medical care and then in making the diagnosis. The paper mentioned describes what impacted their survival over the long run.
Q. Did that study also generate a number of publications?
A. Yes, it did.
Q. Last publication I want to ask you about is called the "Sleep/Heart Health Study Design Rationale and Methods" published in 1997. Could you tell us about that study.
A. Yes. Since early 1995 I've been chairing for the National Institutes of Health a multi-centered study on sleep and sleep disordered breathing, the

problem of breathing pauses during sleep and risk for cardiovascular disease. This is a multi-site study involving about 6,000 persons, including about a thousand from Minnesota, who are now going to be followed for their risks of heart disease in relationship to the sleep that we've just finished

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

measuring.
Q. And as part of this study, did you collect -- are you collecting information on smoking?
A. Yes.
Q. Doctor, you've also done work for the Surgeon General of the United States regarding smoking and health.
A. That's correct.
Q. Correct?
You wrote a chapter for the 1984 report; is that right?
A. That's correct.
Q. The 1984 report concerned chronic lung disease; is that correct?
A. Yes.
Q. And you wrote a piece on smoking, lung function and development of chronic obstructive pulmonary disease; is that correct?
A. That's right. That was my contribution.

Q. And you also wrote a chapter in the 1984 report; is that right? I'm sorry, the 1985 report.
A. Yes, I did.
Q. Can you tell us the subject matter of that submission.
A. That submission was essentially on smoking and lung disease in the work place.
Q. And were you also consulting scientific editor for the 1985 report?
A. Yes, I was.
Q. Did you submit a paper for the 1986 report?
A. Yes, I was one of the authors of the 1986 report.
Q. And were you also consulting scientific editor of that report?
A. Yes, I was.
Q. Did you also make a contribution to the 1989 report?
A. Yes. That was the 25th anniversary report, and I contributed to that.
Q. Could you tell us the subject matter of the 1989 report?
A. Well the 19 -- the 1989 report was a review of the information gained over 25 years since the 1964 Surgeon General's report.

Q. And what was the subject matter of your contribution?
A. I contributed to the chapter on the health consequences of smoking.
Q. Did you also make contribution to the 1999 -- or strike that -- the 1990 --
A. Yes, I did.
A. -- Surgeon General's report?
A. Yes.
Q. And could you tell us about that contribution?
A. Well I authored and contributed to several of

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

the chapters in that report.
Q. What was the subject matter of that report?
A. That report was on the health benefits of smoking cessation.
Q. And were you the senior scientific editor of that report?
A. Yes, I was.
Q. Did you also make a contribution to the 1994 Surgeon General's report?
A. Yes, I did.
Q. What contribution did you make?
A. That report was on children, and I authored the chapter on the health consequences of smoking for children.

Q. And have you also written for one of the Surgeon General's reports currently in development?
A. Yes, I have.
Q. And what is the subject matter of that report going to be?
A. Essentially smoking in minority populations.
Q. Doctor, do you also serve as a reviewer of the Surgeon General's reports?
A. Yes. For a number of years I have both reviewed the outlines of the reports as they've been developed, chapters, selected chapters from the reports, and then the final reports themselves.
Q. And in 1990 did you receive the Surgeon General's Medallion for contributions to Surgeon General's reports?
A. Yes, I did.
Q. Doctor, do you also review or work as a reviewer of scientific literature?
A. Very frequently.
Q. Can you tell us what a reviewer of scientific literature does?
A. A reviewer is sent manuscripts, people's work, describing their data and their interpretation of it. The reviewer assesses whether this contribution -- whether this work will make a contribution, whether

it represents the state of the science, has used the state of the science, and whether the authors have properly interpreted and presented their data, their findings.
Q. Who have you done -- or what publications have you done reviews for?
A. Over the years, many, many journals such as the Journal of the American Medical Association, New England Journal of Medicine, and the Journal of the National Cancer Institute, Cancer, and many journals in the area of cancer and respiratory diseases.
Q. Doctor, how many scientific articles have you reviewed in your career?
A. Probably too many. There are many.
Q. Are you also involved with smoking-and-health issues in China?

http://legacy.library.ucsf.edu/tid/gom35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

A. Yes, I am.
Q. Could you tell us about that.
A. Yes. For several years I have been working with the Chinese government through the Chinese Academy of Preventive Medicine and the Chinese Association on Smoking and Health, providing collaboration and assistance with regard to their recently-completed national study of smoking, and now follow-up surveys related to smoking among Chinese children, trying to

understand its origin, and also among urban and rural populations in China.
Q. In connection with your work on smoking and health, are you also involved with the International Agency for Research on Cancer?
A. I was a member of the 1985 working group on smoking that resulted in the 1986 International Agency for Research on Cancer monograph on smoking.
Q. Are you also involved with the National Cancer Institute?
A. Yes, I'm currently on the Board of Scientific Counselors of the National Cancer Institute.
Q. And have you contributed to the National Cancer Institute's Smoking and Control -- strike that -- Smoking and Tobacco Control monograph series?
A. Yes.
Q. What is that, doctor?
A. This is a series of volumes published by the National Cancer Institute that have addressed specific issues related to smoking and tobacco control.
Q. And were you involved with monograph one?
A. Yes, I was one of the editors.
Q. And was the subject of monograph one tobacco control?

A. Yes.
Q. Was that published in 1990?
A. Yes.
Q. Were you also involved with monograph seven?
A. Yes. I authored it. Yes.
Q. Did you contribute an article on the changing cigarette to monograph seven?
A. Yes, I did.
Q. And was that article published in 1996?
A. Yes.
Q. We'll get to that article later in the testimony; is that right?
A. Yes.
Q. Did --
Were you also a contributor to monograph eight of the National Cancer Institute's monograph series?
A. Yes, I was one of the editors.
Q. And what -- what was the subject matter of monograph eight?
A. This monograph addressed the risks of smoking and mortality over time.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. You're also on the Board of Scientific Counselors at the National Cancer Institute.
A. Yes.
Q. What does that board do?

A. This board provides peer review for the National Cancer Institute's internal research programs.
Q. Let me talk for a moment about your professional memberships, doctor. Are you a member of the American Thoracic Society?
A. Yes, for many years.
Q. Are you a member of the Society for Epidemiological Research?
A. Yes.
Q. And were you president of that society in 1990?
A. Yes.
Q. Are you also a member of the National Academy of Sciences?
A. Correct.
Q. How long have you been a member, doctor?
A. I entered the Institute of Medicine in 1997.
Q. Can you tell us what the Institute of Medicine is?
A. Yes. The Institute of Medicine comprises the health-related arm of the National Academy of Sciences. There are approximately 500 individuals in the Institute of Medicine who have been selected as leaders in their field who can provide guidance to the National Academy on matters of health-related policy in very broad ways.

Q. Doctor, are you also chair of the Committee on Research Priorities for Airborne Particulate Air Pollution?
A. Yes.
Q. What do they do?
A. This is a new committee of the National Research Council that has been asked by the Congress to set a research agenda and essentially assign priorities for spending approximately 50 million dollars of research money annually related to air pollution with particles.
Q. And are you also a member of the Environmental Protection Agency's Science Advisory Board?
A. At the moment I'm a consultant. In the past I've been a member of various committees.
Q. And are you also an advisor to the American Lung Association?
A. Yes.
Q. You're also editor of several scientific publications, including the American Review of Respiratory Disease; is that correct?
A. In the past I've been editor of that, yes.
Q. Okay. And have you also been editor of the American Journal of Epidemiology?
A. Yes. I am at present.

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

Q. And have you been an editor of the journal entitled Epidemiological Reviews?
A. Yes.
Q. And are you a member of several other editorial boards?
A. Yes.
Q. For example, the American Journal of Medicine?
A. Yes.
Q. And you're also associate editor of a journal called Tobacco Control?
A. Correct.
Q. Okay. Doctor, you've been retained as an expert in this matter for the state of Minnesota and Blue Cross; is that right?
A. That's correct.
Q. And you were retained in 1995?
A. Yes.
Q. And this is the first time that you've testified in court as an expert witness; is that right?
A. That's correct.
Q. Now in preparation for your testimony today, did you do a review of the scientific literature on the science of smoking and health?
A. Yes, I conducted an extensive review on this topic.

Q. Yes. Can you tell us briefly what that review consisted of?
A. Yes. Well of course I'd been reading on this topic for many years, but for developing this testimony today an extensive database of the epidemiologic literature was prepared.
Q. And did you have assistance?
A. Yes, I did. I was assisted by an epidemiologist, Tracey Sides, in preparing this database.
Q. And can you tell us briefly the nature of this database?
A. Yes. At this point the database includes over 900 studies that have been reviewed and their results entered into a computer file so that they can be accessed and examined and displayed.
Q. And did you review these articles yourself, doctor?
A. Yes, I'm familiar with these articles.
Q. Now during the course of your testimony, are you prepared to testify about the following matters: Whether smoking causes disease?
A. Yes.
Q. And whether lower tar and lower nicotine cigarettes have reduced the health risks of smoking?

A. Yes.
Q. Doctor, what I'd like to do now is have you come

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

down from the witness stand and, if you would, talk a bit about the anatomy of the human body, and specifically some of the organs that you plan to talk about in your testimony today and perhaps tomorrow.
A. Okay.
Q. First we have to put this model on a pedestal here.
MR. GARNICK: Your Honor, may I go over there and watch?
Q. Now doctor, I want to direct your attention to Trial Exhibit 30110, which is a model of the anatomy of the human body, and if you could tell the ladies and gentlemen of the jury and court about some of the organs in the body.
A. Okay. Well beginning --
Q. Beginning with the air pathway and the pathway for the lung.
A. Right. Let me start from the top. Here what we can see, of course, is the nose and the mouth, leading to the throat, to the larynx, the voice box, where the air passes down.
Q. Doctor, perhaps you could go --
A. Rotate it a little more?

Q. No, if you could come to this side so the judge can see as well.
A. In any case, starting over: The nose, of course, where most of the breathing takes place, some breathing goes on through the mouth depending on the level of exercise, the air passes down the back of the throat, through the larynx or the voice box and into the trachea, which is the tube connecting the voice box to the -- to the lung.
Q. And now could you point out the lungs to the jury, please.
A. Of course we have two lungs, of course, the left lung and the right lung, and sitting between lungs is the heart, as you can see here.
Q. And could you point out the heart and the coronary artery. Perhaps you are going to have to remove one of those lungs.
A. I'm taking out one of the lungs, I hope.
Q. Well maybe we won't remove one of the lungs. There we go.
A. I'm just going to remove the -- the heart, and what you can see with the heart is that the heart itself has its own blood vessels, the blood vessels -- the heart is a muscle, it's a pump, and the blood vessels that take the blood into the heart

are called the coronary arteries.
Q. Can we talk about the organs in the abdominal cavity now, doctor.
A. Okay. So just looking front-on, we can see this large brown structure here is the liver. Over here we see the stomach, which will connect behind the duodenum, which is how it leads on into the

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

intestine. These would be the small intestines, this yellowish mass here, and then this larger structure here would be the large intestines, the colon.
Q. And are there other organs behind the stomach as well; for example, the kidney and the pancreas?
A. Yes, there are. And if I can successfully remove the small intestine and the liver, we can see of course there is a kidney on both sides, the right kidney and the left kidney, and then sitting behind the stomach there's also now the secretory organ, the pancreas, which makes digestive enzymes and also insulin.
We can see here, this is just the start of the intestines, the duodenum, which is the point where the stomach connects to the intestines.
Q. Thank you, doctor. You can return to the witness stand now.
Doctor, let's turn to the animations to continue

the lesson in anatomy, and specifically Trial Exhibit 30255, if you could access that animation and show us how people breathe normally.
A. Here we go.
Q. Good.
A. Yeah. Here we're just looking at normal respiration with the lungs, of course, expanding and contracting. You can see the heart sitting between the lungs beating. And air, of course, would be entering and leaving. Air predominantly, actually, during resting breathing, comes in through the nose, and then of course goes out into the gas-exchanging portions of the lung.
Q. Could you turn to the next animation, which shows lung structure and function.
A. Okay. Here --
Q. Tell us what we see here, doctor.
A. Here again, we're now looking at the lungs again, beating -- moving slowly now in slow motion, the heart beating, the air being carried into the lungs, down the trachea, to this tissue of the lung itself.
Here we're seeing that tissue, which has been said to be sponge-like. The space is corresponding to the air sacks, the alveoli, where gas exchange

takes place within the -- within the lung.
Now what we're going to see as this goes on is the structure in more detail, with here the bronchus or the tube leading out. These tubes divide and divide and divide perhaps 16 to 20 times until they reach the level of the alveoli, which are the actual gas-exchanging surfaces of the lung.
And so now we're going to take a look at an alveolus in more detail, and you can see that surrounding the alveolus there are blood vessels. There's a very delicate layer of small blood vessels, capillaries, that bring unoxygenated blood, shown

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

here in blue, to the alveolus, and there oxygenation takes -- takes place.
Q. Can we go to the next frame, doctor.
A. And now as we keep going, we're just going to see how the blood would be circulating through this delicate capillary network with exchange of gases going on, the carbon dioxide passing out and oxygen going into the capillary where it binds to the hemoglobin within the red sells, which are the spherical structures moving past in this -- in this animation. And then the blood from the capillaries, all these capillaries around the many, many alveoli, joins up into larger and larger vessels, returning to

the heart to be pumped out through the left side of the heart to the body.
Q. Doctor, could we go to the next animation illustrating the function of the heart.
A. Yes. Again, now, on this animation, we're going to just be taking a more detailed look at the heart, shown here beating. And now in this diagram we see the heart itself, it has -- it's a pump, pumping blood from the right side. That is returned from the body, out to the lungs, shown there in blue, into the lungs where, as it becomes oxygenated, the blood goes from a bluish color to a pinkish color, returning to the left side of the heart to be pumped out through the great vessels to the body.
These are simply the names of all these different tubes and the different chambers of the heart shown on this -- on this portion of the animation.
Q. Doctor, let's talk about smoking now. And could you show us an animation about how smoke enters the body.
A. On this animation we're going to again see the -- we will again see the lungs in -- being filled and then emptying, the heart beating, and now an animation of a cigarette being smoked and the smoke

entering into the lungs.
Here we can see the smoke spreading out through the tubes of the lung and reaching the alveoli, the gas-exchanging surface of the lungs.
Q. Could you go to the next frame, doctor.
A. Yes.
Q. Now what do we see there?
A. In this frame, for example, or next frame?
Q. Well, let's go to the next frame, smoker lung one.
A. Okay.
Q. Okay. Tell me what we see.
A. This frame is merely an animation, a schematic of smoke within the lungs.
Q. Doctor, what is tobacco smoke made up of?
A. Well smoke is made up of a mixture of particles and gases.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. And what are some of the chemical compounds in smoke?
A. Of course thousands of compounds have been identified in smoke. Some of the compounds that I'll just briefly mention are carbon monoxide, nitrogen oxides, cyanide, benzine, radiation, and many carcinogens, a number of carcinogens.
Q. Doctor, what's a carcinogen?

A. A carcinogen is a -- an agent that is capable of causing cancer, that causes cancer.
Q. Doctor, I want to show you now a demonstrative Exhibit, 30152. It's been previously admitted. But before I do that, I'm going to have to move a couple things around, so if you'll give me a moment.
A. Okay.
Q. Doctor, I've placed on the easel here Trial Exhibit 30152, entitled "Known Carcinogens in Tobacco Smoke Identified to Date." Can you tell me what is on this exhibit, please.
A. This list --
This exhibit lists 71 carcinogens identified in tobacco smoke to date, and I think the date here is from an article published in 1997.
Q. Okay. Now can we go back to the animation, doctor, and could you show the ladies and gentlemen of the jury how the components of smoke are transferred from the lung to the bloodstream.
A. Okay. Just to pass back through this animation, of course we said that the lung has this very delicate structure with the large surface for exchanging materials, the alveoli, this sponge-like surface that we talked about, and we said that within its structure the tubes branch and bring the air

containing smoke out to these delicate alveoli. And again, the alveolus is surrounded by the network of blood vessels that we -- that we talked about.
And here again we just see the reminder that the blood is circulating around these alveoli, oxygen is coming -- coming in, carbon dioxide is going out. Then in the case of smoking, nicotine, the small bullet-like items in this animation, carbon monoxide, a gas, are crossing, and carbon monoxide, for example, is bound quite tightly by the hemoglobin, in fact far more tightly than oxygen itself. So again, as shown in this schematic, as the blood returns to the left side of the heart to be pumped out to the body, it would be containing these agents that it had picked up during its contact with the gas -- the smoke in the lungs.
Q. And then once it enters the heart, where does it go from there?
A. Well of course the blood that enters the left side of the heart is pumped out through the aorta throughout the body and all the organs of the body.
Q. Doctor, let's turn to the subject now of

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

epidemiology.
Could you give us, perhaps, a little more detail regarding what the study or the science of

epidemiology is.
A. Yes. I gave one definition as I began talking. Epidemiology, again, is the science, including the methods that are used, to study disease in human populations. We use epidemiology to identify the causes of disease, to identify the causes of health, and it's our way we go to the population to find out what amongst people is determining health.
Q. Now how do empidemiologists measure the consequences of being exposed to cigarette smoke?
A. Well in terms of the actual measures that are used, there are two relatively straightforward measures that are used to describe how smoking affects risk for disease.
Q. And what are those measures?
A. One is called the relative risk, and the other is called the attributable risk.
Q. Well let's talk about relative risk for a moment. And I first want to identify demonstrative Exhibit 30159, which is a simple example of a relative risk calculation.
MR. HAMLIN: And I want to offer it for illustrative purposes only.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30159.

BY MR. HAMLIN:
Q. Doctor, I'm going to place the exhibit on the board, and if you would, would you come down and explain just exactly how we go through this calculation and what we obtain.
A. Okay. This board just simply shows some theoretical data from perhaps a study involving 100 smokers and 100 never smokers, and perhaps these two hundred people have been followed over time, and after they've been observed in this study, of the smokers, ten out of the 100 have developed lung cancer, leaving 90 who have not, and again in this example, one of the 100 never smokers has developed lung cancer, leaving 99 who have not.
The way we would measure the strength of smoking as a cause of cancer, of lung cancer in this example, one way would be to calculate this value, the relative risk, and it's just the proportion of the smokers, our ten over 100, divided by the proportion of the never smokers, the one over 100, and in this case that answer is ten. That means that for the smokers, they have 10 times the risk, that's 1,000 percent, of the never smokers of developing lung cancer.
Q. So the relative risk is the increased risk for

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

those who smoke.
A. That's correct.
Q. And what -- what would be the percentage there, doctor?
A. Well the percentage, as I said, this relative risk of ten is the same as a one thousand percent increase.
Q. Now doctor, I want to --
You better stay where you are.
MR. HAMLIN: I want to identify demonstrative exhibit -- Trial Exhibit 30160, which is an example of the attributable risk calculation, and offer that for illustrative purposes only.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30160.
BY MR. HAMLIN:
Q. Now doctor, directing your attention to Trial Exhibit 30160, could you take us through this exhibit, which is titled "Calculating Attributable Risk."
A. Yes. As I -- as I said, there are two ways that we measure the disease risk caused by smoking, one the relative risk we just saw. This is the second way, the attributable risk. This is the same example, and in this example, to calculate the

attributable risk, rather than dividing as we did to calculate the relative risk, we're going to subtract. So we're going to take this risk in the smokers, ten over 100, and take away from that the risk in the never smokers, the one over 100, leaving nine per hundred. And what that is is just simply the extra risk that the smokers have because they were smokers rather than never smokers.
So again, the attributable risk just comes from subtracting the risk of the never smokers from that of the smokers.
Q. Thank you, doctor.
Now empidemiologists do certain types of studies; is that right?
A. That's correct.
Q. I now want to show you another demonstrative exhibit, it's Trial Exhibit 30158, which lists those types of studies.
MR. HAMLIN: And I would offer that, Your Honor, for illustrative purposes.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30158.
Q. I'll put the exhibit on the easel.
Doctor, this exhibit is titled "Major Epidemiologic Study Designs." Could you tell the

ladies and gentlemen of the jury the various designs and give us a little detail about each.
A. This board lists the names of four types of

http://legacy.library.ucsf.edu/tid/gon05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

studies that empidemiologists do, and these are the main types of studies. There's two broad groups shown here. The top three are what we call observational studies. The bottom, the randomized clinical trial, is an experiment, and you might have heard of that kind of experiment where people are randomized to take a drug to determine if the drug works for a particular disease, perhaps some taking the drug and some taking another drug or placebo.

For smoking, of course, we can't do randomized trials, assigning people to smoke or not to smoke, although we have done randomized trials of the benefits of smoking cessation. But the evidence that I'll be talking about comes principally from these observational studies, the cross-sectional study, the same as a survey, the cohort study, and the case-control study.

If I could just say a word or two about each design.

Q. Yeah. Could you tell us about, yeah, the design of the cross-sectional study.

A. Okay. In a cross-sectional study, it's like a

survey, so this would be just asking someone at one point in time, for example, do they smoke, do they have chronic obstructive pulmonary disease, symptoms of cough or other symptoms? Just at one instant in time, that's a survey.

Q. And can you tell us about the next study design, which is cohort study?

A. The next study design listed here, the cohort study, is a prospective design, it's often called a prospective study, and this involves following groups of people over time, say smokers and never smokers, and looking at the risks of disease in the groups, the two groups, as they're followed.

Q. And could you tell us about the third type of study design, the case-control study.

A. The case-control study is sort of the opposite of the cohort study, so instead of starting with people who are smokers and never smokers, in this case we studied people who have the disease we're concerned about, perhaps lung cancer, and some control group who are like the people who have the disease, lung cancer, but don't have it, and then we obtain information about their exposures.

And I'll be talking later on about case-control studies of lung cancer involving people who have lung

cancer and controls where both groups were asked in the same way about their smoking.

Q. Could you tell us about the final study design on the exhibit, which is randomized clinical trial?

A. Yes. This design, of course, is -- is very important for evaluating therapies and benefit -- beneficial interventions. It involves assigning at random groups to be exposed to the treatment and --

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

or not exposed to the treatment that's being tested, and this design has been used, for example, to determine if intensive smoking cessation methods will benefit lung health.
Q. Thank you, doctor. You can return now to the stand and I'll put this exhibit down.
THE COURT: Counsel, why don't we take a short recess at this time.
MR. HAMLIN: Yes, Your Honor.
THE CLERK: Court stands in recess.
(Recess taken.)
THE CLERK: All rise. Court is again in session.
(Jury does not enter the courtroom.)
THE COURT: I would like to direct these few comments to counsel in this case.
I expect counsel to act at all times in a

courteous manner and to act as officers of this court. In conducting this trial I do not want counsel to be leaning on the bench at the jury box nor standing there when you conduct examination. I do not want counsel making any unnecessary noise, unnecessary paper shuffling, unnecessary note passing so as to distract the jury from hearing the testimony that is going on in the trial.
I prefer not to have to correct counsel in front of the jury. Please do not force me to do that.
Bring the jury in.
THE CLERK: All rise.
(Jury enters the courtroom.)
THE CLERK: Please be seated.
THE COURT: Counsel.
MR. HAMLIN: Thank you, Your Honor.
BY MR. HAMLIN:
Q. Dr. Samet, I believe you testified that these first three study designs, cross-sectional, cohort, and case-control, are observational studies; is that right?
A. That's right. And as applied to smoking, these are designs in which we would be studying the consequences of people smoking or not smoking as occurs in the population.

Q. Now how many of the studies that we'll be discussing today are randomized clinical trials?
A. Very little evidence that we'll be discussing will come from randomized clinical trials.
Q. Why is that?
A. Well the only clinical trials -- randomized clinical trials that could ethically be done on smoking involves randomization of smoking cessation analysis, and certainly not randomization of people who smoke or not smoke, that simply would not be ethical.
Q. Why wouldn't it be ethical?
A. Well because of the evidence that smoking is a

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

cause of disease.
Q. Doctor, can bias affect the results of epidemiological studies?
A. Yes, it can.
Q. How?
A. Well by -- by "bias," we're referring to any distortion of the findings of an epidemiologic study away from the truth.
Q. What kinds of bias are there?
A. Okay. Technically we talk in epidemiology about three different kinds of bias, information bias, selection bias, and something we'd call confounding.

Q. Can you give us an example of information bias.
A. Yes. Information bias means that the information obtained in the study may have some error in it. For example, the study might be done and someone who smokes, instead of correctly reporting their smoking or that they are a smoker, gives incorrect information. That would be an example of information bias.
Q. Can you give us an example of selection bias.
A. Yes. Selection bias refers to bias coming from the way that people are selected to be in the study. For example, someone might be doing a survey and perhaps people who smoke and are also sick are less likely to participate in the study than those who are healthy, so this bias through the selection of people to be in the study would introduce perhaps some distortion.
Q. Can you give us an example of confounding.
A. Okay. Confounding refers to the bias that arises when the effect of one factor is mixed up with the effect of the factor that we want to study.
Let me -- let me try and give you an example. Let's say that we're interested in the risk of high -- having high blood pressure and heart attack, and if those who have high blood pressure are also

more likely to have high blood cholesterol levels, another cause of heart attack, then when we looked at the effects of hypertension, they could be mixed with those of having a cholesterol level that was high, and the resulting assessment of the effects of high blood pressure, we would say, might be confounded by the effects of having high blood cholesterol.
Q. Doctor, how do empidemiologists correct or deal with bias?
A. Well we're always concerned about bias. We know that bias can affect observational studies. As we design studies, think about how the information will be collected and ultimately analyzed, we look each step along the way for how we can control the effects of bias, or in the end as we analyze the data and interpret it, try to find out if bias occurred and what its effects could have been.
Q. Doctor, how do empidemiologists correct for

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

confounding?
A. Okay. Remember in confounding we're concerned about the effect of one factor being mixed up with that of a factor we're studying, and one very basic approach to this is something called stratification. So we divide the data up into different groups of people that are alike on the factors that might be

confounders, but let's say are smokers and non-smokers. Or on an example of hypertension, we would look at the effects of having high blood pressure in people with low cholesterol and high cholesterol. So we're always putting the data of the group, the information from people, into piles of like and like, except for the fact that we're trying to understand its effects.
Q. So in comparing like to like, doctor, are we attempting to measure the differences between these two groups?
A. Well what we would like to do in the end is to have the data lined up in these piles as like and like, differing only in the effects of the factor that we are interested in studying, today talking about smoking. So we would try and put the data into these piles for the different confounding factors, comparing smokers and non-smokers in -- in groups that are alike.
Q. And in that way you would isolate the effect of smoking; is that it?
A. This would be a strategy that would allow us to isolate the independent effect of smoking from the effects of these potential confounding factors.
Q. Doctor, let's turn now to some selective

epidemiological studies concerning smoking and health.
The first study is the Wynder and Graham study, and it is at Trial Exhibit 15911 in your testimony notebook. Do you have that study in front of you, doctor?
A. Yes. Yes, I do.
Q. And can you identify that study for the record, please.
A. Yes, this is a paper published in the Journal of the American Medical Association, May 27th, 1950, entitled "TOBACCO SMOKING AS A POSSIBLE ETIOLOGIC FACTOR IN BRONCHIOGENIC CARCINOMA" by Ernest L. Wynder and Evarts A. Graham.
Q. Doctor, did you review this study as part of your investigation in this case?
A. Yes.
Q. Does this study form part of the basis of your opinions in this case?
A. Yes, it does.
Q. Doctor, do you consider this to be a reliable authority in the published scientific literature?
A. I do.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

MR. HAMLIN: Your Honor, we offer Trial Exhibit 15911 under Rule 803(18) as a learned

treatise.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 15911.

BY MR. HAMLIN:

Q. Doctor, I now want to identify demonstrative exhibit -- it's Trial Exhibit 30162, title is "Wynder & Graham Case-Control Study."

MR. HAMLIN: Your Honor, we're offering this for illustrative purposes only.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30162 for illustrative purposes.

BY MR. HAMLIN:

Q. I'm going to put the board on the easel, and doctor, I'd like to ask you to come down from the witness stand and, if you will, if you could take us through this exhibit.

First of all, could you give us the title again.

A. The title is -- of the exhibit is "Wynder & Graham Case-Control Study (1950)."

Q. And this refers to the study that you just identified; is that right?

A. That's correct.

Q. And there are two columns, one is "Design" and the other is "Results." Could you explain to us what

is in the design column.

A. Yes. This -- these four bullets just simply sketch out the design features of the study. This is a case-control study, one of the three types of observational studies. This is the type involving comparing the exposures of people who have a disease, in this example lung cancer, with that of controls. So this was a case-control study, the patients from the United States, 605 persons who had lung cancer, 780 controls without lung cancer. By interview they responded to information concerning their smoking.

Q. Let's go to the results column, doctor. Could you describe for us what is in that column.

A. Yes. This -- this portion of the board simply shows the results of this study. So now we're looking at relative risk values where for never smokers who smoke zero cigarettes a day the relative risk is set at one. That's our baseline value. Then we can see increasing numbers of cigarettes per day smoked -- smoked by these individuals, up to 35 or more a day, and then the corresponding relative risk values.

There's several things that you should notice here, that, in general, as the number of cigarettes smoked per day goes up, the relative risk rises.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

This is something that we will be referring to as a dose/response relationship or an exposure/response relationship. The other is just simply in terms of how high the values reach. At the higher levels of smoking, the smokers have about 30 times the risk of the never smokers of lung cancer. That's a 3,000 percent increase, approximately, in risk for lung cancer in this study done in 1950.

Q. All right, doctor. Let's go on to the next study. And maybe what I'd ask you to do is bring your notebook down, and we can put it on the podium and more easily work with the demonstratives.

The next exhibit that I want to direct your attention to is 16769, which is the Doll and Hill study. Could you turn to that.

A. Yes.

Q. Do you have that in front of you?

A. Yes.

Q. Could you identify that, doctor, please.

A. Okay. This is a publication in the British Medical Journal in 1950, Volume II, pages 735 through '48 entitled "SMOKING AND CARCINOMA OF THE LUNG, PRELIMINARY REPORT" by Richard Doll and A. Bradford Hill.

Q. Doctor, have you reviewed that study as part of

your investigation in this matter?

A. Yes.

Q. And does that study form a part of the basis of your opinions in this case?

A. Yes.

Q. Do you consider it a reliable authority in the published scientific literature?

A. Yes.

MR. HAMLIN: Your Honor, we offer trial Exhibit 16769 as a learned treatise.

MR. GARNICK: No objection.

THE COURT: Court will receive 16769.

BY MR. HAMLIN:

Q. Doctor, I now want to direct your attention to demonstrative Exhibit 30161 which is titled "Doll & Hill Case-Control Study (1950)."

MR. HAMLIN: And Your Honor, we offer that exhibit for illustrative purposes only.

MR. GARNICK: Your Honor, I might be missing it, but defendants would object because I don't think that the risk estimates on these -- on this demonstrative exhibit appear as in the study itself. If that's the representation, I might well be mistaken, but I could not find it.

MR. HAMLIN: Well --

THE COURT: Okay.

MR. HAMLIN: -- Your Honor, I can lay some foundation.

THE COURT: All right. Lay some foundation

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

then.
BY MR. HAMLIN:
Q. All right. Doctor, now you have reviewed the Doll and Hill article, including the tables and the data; correct?
A. Yes, I have.
Q. And based on the information and the data in the study and in the article, did you prepare Trial Exhibit 30161?
A. Yes.
Q. Okay. And does Trial Exhibit 30161 accurately and faithfully represent the information and data contained in that article?
A. That's right. It's simply a recalculation and redisplay of data contained in the article.
Q. And will this exhibit assist the jury in understanding your testimony?
A. Yes.
MR. HAMLIN: Your Honor, we'd offer it.
MR. GARNICK: Your Honor, we have no objection as a recalculation.

THE COURT: All right. Court will receive 30161 for illustrative purposes.
MR. HAMLIN: Thank you, Your Honor.
BY MR. HAMLIN:
Q. Dr. Samet, let's put the exhibit up on the easel. Once again we see two columns, "Design" and "Results." Doctor, could you tell us about the design of the Doll and Hill case-control study.
A. Yes. This is a study similar in design to the study that I just described by Wynder and Graham, a case-control study involving persons coming to a hospital in London with a presumptive diagnosis of lung cancer, those 709 persons, and a group of controls not having lung cancer were selected for this study, and they were interviewed concerning smoking and other factors.
Q. Let's go to the results column, doctor. Could you tell us about the results of the Doll and Hill case-control studies.
A. The left side of the board simply shows, as in the previous study, the relative risk for lung cancer in men, comparing ever smokers to never smokers by the number of cigarettes smoked per day. As in the other study we see a dose/response, the relative risk rises with the number of cigarettes smoked per day,

again reaching values at the higher levels of smoking around 30, or again, approximately 3,000 percent increased risk for developing lung cancer in the smoker compared to the never smoker.
Q. All right, doctor, I want to show you now the British doctors studies, and there are several exhibits in your testimony notebook. Could you first turn to Exhibit 15913. Do you have that?
A. Yes.

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

Q. Could you ideitify this, doctor.
A. This is a paper from the British Medical Journal, December 25th, 1976, entitled "Mortality in relation to smoking: 20 years' observations on male British doctors" by Richard Doll and Richard Peto."
Q. Can you tell us a little bit about the British doctors study.
A. Yes. This was a study started in 1951 by Richard Doll and Bradford Hill following the case-control study in which approximately 36,000 male physicians and another group of about 6,000 female physicians were enrolled in a cohort study, a follow-up study that in fact has been going on to the present. The 40-year data were recently reported.
Q. And this is one of the reports that you've just identified?

A. Correct. This is the report of 20 years of observation.
Q. Okay. Let me direct your attention now to another report of the British doctors study, that's 15918. That's the trial exhibit number. Could you identify that, doctor?
A. Yes. This is another paper published in the British Medical Journal, June 26, 1954, entitled "THE MORTALITY OF DOCTORS IN RELATION TO THEIR SMOKING HABITS, A PRELIMINARY REPORT" by Richard Doll and A. Bradford Hill.
Q. Doctor, let me direct your attention now to Trial Exhibit 15973. Could you identify that exhibit for the record, please?
A. Yes. This is another paper from the British Medical Journal published in 1964, Volume I, pages 1399 to 1410. This paper is entitled "Mortality in Relation to Smoking: Ten Years' Observations of British Doctors," in other words, the 10-year follow-up on the study. The authors, again, Richard Doll and Austin Bradford Hill.
Q. Doctor, could you direct your attention now to Trial Exhibit 20203. Could you identify that exhibit, sir.
A. Yes. Still another paper from the British

Medical Journal, now April 5th, 1980, entitled "Mortality in relation to smoking: 22 years' observations on female British doctors" by Richard Doll, Richard Gray, Barbara Hafner and Richard Peto.
Q. This is now another report of the British doctors?
A. That's correct, focusing on the female British doctors.
Q. And finally, doctor, could you turn to Trial Exhibit 20213. Could you identify that study, sir.
A. Yes. This is another paper from the British Medical Journal, October 8th, 1994, "Mortality in relation to smoking: 40 years' observations on male British doctors," in other words, the results of the

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

40-year follow-up on the original cohort, authors Richard Doll, Richard Peto, Keith Wheatley, Richard Gray and Isabelle Sutherland.
Q. Doctor, did you review Trial Exhibits 15913, 15918, 15973, 20203 and 20213 as part of your investigation in this case?
A. Yes.
Q. And do these studies form part of the basis of your opinions in this case?
A. Yes, they do.
Q. All right. Do you consider these studies to be

reliable authorities in the published -- published scientific literature?
A. Yes.
MR. HAMLIN: Your Honor, we offer trial Exhibits 15913, 15918, 15973, 20203 and 20213.
MR. GARNICK: No objection.
THE COURT: Court will receive 15913, 15918, 15973, 20203 and 20213.
MR. HAMLIN: Thank you, Your Honor.
BY MR. HAMLIN:
Q. At this time, Dr. Samet, I want to direct your attention to another demonstrative exhibit, it's Trial Exhibit 30164, title of this is "British Doctors Study Design."
MR. HAMLIN: Your Honor, and we offer it for illustrative purposes only.
MR. GARNICK: No objection.
THE COURT: Court will receive 30164 for illustrative purposes.
BY MR. HAMLIN:
Q. Doctor, let's put this board on the easel. Now the title of this exhibit is "British Doctors Study Design." Can you describe for the jury the study design of the British doctors.
A. Okay. This is really just a layout of what I've

already described about the study. This was a prospective cohort study, a follow-up study. It began in 1951 when Doll and Hill identified this group of physicians to follow over time. The original group included the male physicians whom I mentioned, another group of approximately 6,000 female physicians. Some of the diseases that were looked at -- everything here was looked at in terms of mortality -- included lung cancers, chronic obstructive pulmonary disease, coronary heart disease, to diseases of the heart vessels associated with heart attack, and other diseases. And in this study they periodically asked the doctors, again, if -- about their smoking, so that those who were not smoking originally, they found out whether they had started, those who may have stopped smoking, they found out if they had stopped.
Q. Doctor, if you could now return to the stand and please take your notebook with you.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Doctor, we've now described the study design of the British doctors. We now have some demonstrative exhibits to describe the results. The first demonstrative exhibit is Trial Exhibit 30104.

MR. HAMLIN: Your Honor, at this time we offer it for demonstrative purposes only.

MR. GARNICK: No objection, Your Honor.

THE COURT: It will be received into evidence.

MR. HAMLIN: Put that on the overhead.

Q. Doctor, as you can see, the exhibit is entitled "Relative Risk of Lung Cancer at Various Points of Follow-Up in the British Doctors Study, 1951-1991 - Men." Doctor, could you explain to us what is on that table. Perhaps you could start at the left-hand column --

A. Right.

Q. -- and work across.

A. This -- this table -- this table simply describes the results of the British doctors study as it unfolded over time, first at four years of follow-up, then at ten years of follow-up, 20 years of follow-up, and I think, going on down the table, at 40 years of follow-up. At each point of follow-up the relative risk for developing lung cancer is shown for never smokers, zero cigarettes a day, and then the various smoking groups, one to 14 cigarettes a day, 15 to 24, and 25 or more a day. And then the overall increase in risk for current smokers compared to never smokers is up at the top.

What we can see is that in each -- at each time

point there is a very strong increase in risk for current smokers for lung cancer compared with never smokers, and at each time period we can see a very strong dose/response; that is, an increase in relative risk for lung cancer going from one in the never smokers to 20 or more in each of the time periods.

So if we could just run through these, these are the data at four years of follow-up, ten years of follow-up, going from one up now for 25 or more cigarettes a day to a 32-fold increased risk, that's over 3,000 percent. At 20 years of follow-up, again evidence of a strong dose/response, and that persisted out to 40 years of follow-up. So here we have a --

Q. Doctor, at the 40-year follow-up, could you take us through the various columns which are cigarettes per day and relative risk?

A. Certainly. So at the 40-year follow-up for current smokers, the overall risk, relative risk compared to never smokers was 14.9, approximately 15. Again going through the dose/response, our never smokers are one by definition, persons smoking one to 14 cigarettes a day 7.5 or 750 percent increase, 15

http://legacy.library.ucsf.edu/id/ggm35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

to 24 cigarettes a day 14.9 or approximately 1500

percent increase, 25 or more cigarettes a day, relative risk of 25.4, approximately 2500 percent increase in relative risk.

Q. So this rise in relative risk is what you call a dose/response?

A. Dose/response.

MR. HAMLIN: Your Honor, at this time we offer Trial Exhibit 30106, which is another demonstrative exhibit entitled "Relative Risk of COPD at Various Points of Follow-Up in the British Doctors Study, 1951-1991 - Men." And we offer that for illustrative purposes.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30 --

MR. HAMLIN: 106.

THE COURT: -- 106.

MR. HAMLIN: 30106.

BY MR. HAMLIN:

Q. And -- no, that's not -- let's see 106. Okay.

Actually, I think I made a mistake in reading the title there. It's "Coronary Heart Disease."

Doctor, can you correct my mistake and read the title of this demonstrative?

A. Certainly. This demonstrative, the table is entitled "Relative Risk of Coronary Heart Disease at

Various Points of Follow-Up in the British Doctors Study."

Q. And can you describe for us what's in this exhibit?

A. Yes. This -- this exhibit is laid out exactly like the last one. We're again looking at the findings of the British doctors study, four years, 10 years, 20 years and 40 years of follow-up. The information is shown for ever smokers compared to never smokers, and then the dose/response.

Now one thing you've probably already noticed is that in this case, for coronary heart disease, the relative risks are lower than what we saw for lung cancer; instead of talking about relative risk of 20 or 25 or 30, the values are 1.4 and so forth. If I could see the 29 --

At 20 years, I think it's about 1.9 for the 25 or more. We see these lower relative risks in this case because coronary heart disease has certainly other causes besides smoking, and we're now seeing the added effect of smoking on top of the effect of these other factors. We still see evidence of dose/response with the risks tending to rise. And again, across the 40 years of follow-up, we see that the dose/response persists.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. Doctor, I want to direct your attention now to Trial Exhibit 30105. That's a demonstrative exhibit entitled "Relative Risk of COPD at Various Points of Follow-Up in the British Doctors Study, 1951-1991 - Men."

MR. HAMLIN: And Your Honor, at this time we offer Trial Exhibit 30105 for illustrative purposes only.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30105 for illustrative purposes.

BY MR. HAMLIN:

Q. Doctor, first can you tell us what COPD stands for?

A. Yes. C -- COPD stands for chronic obstructive pulmonary disease. Now that's the name being used at the moment for disease that often in the past has been called emphysema or sometimes chronic bronchitis, but it refers to the irreversible damage of the lung that results in shortness of breath and functional limitation in people who smoke. And in fact, the lungs of people who have this condition do show emphysema and other signs of damage.

Q. Doctor, can you go to the 40 years' follow-up and take us through the columns there.

A. Yes. Again, this table is laid out very much like the other tables, showing the overall increase in risk for current smokers compared to never smokers, 12.7, and again the dose/response, one for the never smokers, rising up to 22.5, over 2,000 percent increased risk for COPD deaths for those smoking 25 or more cigarettes a day.

Again, you can see that in contrast to the heart disease data that we just saw, and more like the lung cancer, the relative risks are very high, the dose/response is very steep, and again, that reflects the fact that at this point in developed societies, the United Kingdom, the United States, there are very few causes of chronic obstructive pulmonary disease other than tobacco smoking.

Q. Doctor, I'd like to direct your attention now to Trial Exhibit 30107, which is entitled "Relative Risk of Lung Cancer at Various Points of Follow-Up in the British Doctors Study, 1951-1953 - Women."

MR. HAMLIN: And Your Honor, we would offer that for illustrative purposes only.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30107 for illustrative purposes.

BY MR. HAMLIN:

Q. Can you put that up? Can you see -- strike that.

Doctor, can you tell us what is on those tables that we see in that exhibit?

A. Okay. These are the findings now for the

http://legacy.library.ucsf.edu/tid/gon05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

relative risk of lung cancer. I should make clear that this is death from lung cancer in the women, approximately 6,000, included in the British doctors study at 10 years of follow-up and at 22 years of follow-up. And again, here at 10 years we're looking at a relative risk of lung cancer for current smokers versus never smokers, and at 22 years, looking at the dose/response information.

Q. Now as compared to never smokers, doctor, for the 10-year follow-up, what is the relative risk for current smokers?

A. In 10 years of follow-up -- this would correspond to approximately 1961 -- it was five.

Q. And again, what does that mean?

A. That means a 500 percent increase in the risk of, again, lung cancer death, which was the outcome in this study, for smokers compared to never smokers.

Q. Doctor, I want to direct your attention now to Trial Exhibit 30108, that's a demonstrative exhibit, it's entitled "Relative Risk of Coronary Heart

Disease at Various Points of Follow-Up in the British Doctors Study, 1951 to 1973 - Women."

MR. HAMLIN: Your Honor, at this time we offer this exhibit for illustrative purposes only.

MR. GARNICK: No objection.

THE COURT: Court will receive 30108 for illustrative purposes.

BY MR. HAMLIN:

Q. Doctor, I want to direct your attention now to the chart that we see on the screen, and can you describe for us the tables and the data on that chart.

A. Yes. Again, this is information on relative risks for death from coronary heart disease in women participants in the British doctors study at 10 years and at 22 years of follow-up, corresponding to 1973.

Q. Can you take us through the columns, explain to us what we're seeing.

A. Yes. You can see at 10 years, in fact, the relative risk value does not indicate an increased risk for coronary heart disease death in the women in the first 10 years of follow-up. You can see that at 22 years of follow-up there was an approximate doubling of risk of coronary heart disease, relative risk for coronary heart disease death, looking at

women smoking 15 to 24 or 25 or more cigarettes per day, approximately 200 percent.

Q. When you say "doubling," are you referring to the relative risk column, 2.2 and 2.1?

A. Yes.

Q. Doctor, I now want to turn to another study, the Framingham study, and that's at Trial Exhibit 16409 of your testimony notebook. Could you identify that study, doctor.

A. This is a paper published in the Journal of the

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

American Medical Association, February 19th, 1988, entitled "Cigarette Smoking as a Risk Factor for Stroke, The Framingham Study" by Philip Wolf, Ralph D'Agostino, William Kannel, Ruth Bonita and Albert Belanger.

Q. Doctor, have you reviewed this study as part of your investigation in this case?

A. Yes.

Q. Does it form part of the basis of your opinions in this case?

A. Yes.

Q. Doctor, do you consider this study to be a reliable authority in the scientific literature?

A. Yes.

MR. HAMLIN: Your Honor, we offer Trial

Exhibit 16409 as a learned treatise.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 16409.

MR. HAMLIN: Your Honor, I -- excuse me.

Q. Dr. Samet, I'd like to refer you now to another demonstrative exhibit, it's trial Exhibit 30165, and it is a summary of the Framingham study.

MR. HAMLIN: And we offer that for illustrative purposes, Your Honor.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30165 for illustrative purposes.

BY MR. HAMLIN:

Q. Dr. Samet, I'm going to place the exhibit on the easel, and if you could come down from the witness stand.

Doctor, the title of this demonstrative is "Framingham Study." Again, we have two columns, "Design" and "Results for Stroke." Could you talk to us a bit about the design of the Framingham study, based on this exhibit.

A. Yes. Well Framingham refers to Framingham, Massachusetts, which is where the study was done. And this is a small town just to the west of Boston. The study actually originated in the late 1940s

because it had become clear by then that mortality from coronary heart disease was rising, but no one quite understood why.

This study was undertaken as a prospective cohort study in this community to understand the causes of coronary heart disease. It involved a population of over 5,000 men and women. The participants in the study had a fairly extensive set of examinations every two years. The principal consequences, measures of outcome, that were of interest were coronary heart disease and stroke, among others. And the group was followed to identify incidence; that is, new events, and also death and the causes of the death of the participants in the study.

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

Q. Could you turn now, doctor, to the column marked "Results for Stroke," and describe for us the results of the study.
A. Okay. On -- on this side, again we see the results in the Framingham study for occurrence of stroke for women and men; women at the top, men at the bottom. We're looking now again at relative risks for stroke.
These have been adjusted for age and also for one factor that's also a cause of stroke,

hypertension. And here we see the dose/response by numbers of cigarettes smoked per day, and you can see that in men -- in men and in women, there's approximately equivalent dose/response relationship between the number of cigarettes smoked and the relative risk for stroke.
Q. Now doctor, the relative risks that we see there are not as high as for lung cancer and COPD. Why is that?
A. Again, these values are similar to those that we saw in the British doctors study for coronary heart disease. And stroke, like heart disease, has a number of causes. So that here we're looking at the additional risk from smoking as it operates on the background of risk posed by these other causes.
Q. Doctor, I now want to refer you to another study, the American Cancer Society's Cancer Prevention Study, which is at Trial Exhibit 15980 in your testimony notebook.
Do you have that study?
A. Yes.
Q. Could you identify that?
A. Yes. This is a paper published in the American Journal of Public Health, September of 1995, entitled "Excess Mortality among Cigarette Smokers: Changes

in a 20-Year Interval" by Michael Thun, Cathy Day-Lally, Eugenia Calle, Dana Flanders and Clark Heath.
Q. Okay. And have you reviewed that study as part of your investigation in this case?
A. Yes.
Q. Does that study form part of the basis of your opinions in this case?
A. Yes.
Q. Do you consider that study to be a reliable authority in the scientific literature?
A. Yes.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 15980 as a learned treatise.
MR. GARNICK: No objection.
THE COURT: Court will receive 15980.
BY MR. HAMLIN:
Q. Doctor, I now want to show you a demonstrative exhibit regarding the American Cancer Society's Cancer Prevention Study, and that is Trial Exhibit

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

30163.
MR. HAMLIN: And Your Honor, we offer that demonstrative for illustrative purposes.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30163 for

illustrative purposes.
BY MR. HAMLIN:
Q. Dr. Samet, if you could put the board on the easel. The title of the -- of the demonstrative is "Cancer Prevention Study I and II." Can you tell us about the design, and perhaps you could begin by talking about why there are two Roman numerals.
A. Okay. This panel describes the design of two studies done by the American Cancer Society, both involved one million Americans, and both were studies done by the volunteers of the American Cancer Society who assisted in the recruitment of the participants to this study -- studies and collecting the data.
The first study, sometimes referred to as CPS or Cancer Prevention Study No. I, went on from 1959 to 1972, involving about a million Americans. CPS II, which is still in progress, began in 1982 and involves, again, about a million Americans, not the same people who are in CPS I, but a new group who were enrolled into CPS II.
These groups, both the million, have been followed in this prospective cohort study, and the American Cancer Society identifies each person who has died and gains information about what has caused the death, the cause of death. There has been in

these studies some periodic attempt to reassess smoking.
Q. Doctor, I see a bullet point there, age 30 plus. What does that mean?
A. That's right. This bullet simply refers to the age of the participants. They were at least 30 years at the time they were -- began their participation in this study.
Q. Let's go to the column marked one and two results. Can you tell us what we see in that column?
A. Okay. Here we now see two columns, men and women, and then within each column CPS I and CPS II. Now what we're looking at here is the relative risk for death, for death, comparing current smokers to never smokers for a number of causes of death, lung cancer, other cancers linked to smoking, coronary heart disease, chronic obstructive pulmonary disease, and stroke.
So let's take, for example, lung cancer. For men, the overall relative risk in CPS I, that was 1959 to '72 -- actually I think in this comparison we're looking at the early years of the study, this is '59 to '65, and '82 to '86. The relative risk of death in men in CPS I, 11.9, about 12, in CPS II, 23. In women in CPS I the relative risk is 2.7, about

http://legacy.library.ucsf.edu/tid/gom35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

three, and in CPS II, 12.8.

And we can go down, and for each disease category you can see that all the relative risk values are above one. You can see that in general, and I think in every instance, the relative risk values have risen comparing CPS II to CPS I, approximately 15 -- I'm sorry, 23, 24 years earlier. You can see that the rise has been particularly strong in women for the relative risks; for example, chronic obstructive pulmonary disease, 6.7 CPS I, 12.8 CPS II; lung cancer, 2.7 CPS I, '59 to '65, 12.8 in the 1980s. And you can see, again, the varying strength of tobacco smoking -- of cigarette smoking in causing these diseases, going from lung cancer, 23-fold increase, to coronary heart disease, a doubling of the risk of dying by -- for the current smokers compared to never smokers.

Q. Now doctor, let's be clear about that term that you just used. You said "never smokers." What -- what do you mean by "never smokers?"

A. These --

In this study, these never smokers would refer to individuals who reported themselves as never smoking essentially a significant amount of -- number of cigarettes.

Q. Was there a threshold amount?

A. Yes. But I can't remember what the exact cutoff was.

Q. All right. Doctor, I now want to direct your attention to Trial Exhibit 16039. That's the nurses health study. You have that study, sir?

A. Yes.

Q. Can you identify it?

A. Yes. This is a paper published in the New England Journal of Medicine, 1987, pages 1303 to '9 in Volume 317, entitled "RELATIVE AND ABSOLUTE EXCESS RISKS OF CORONARY HEART DISEASE AMONG WOMEN WHO SMOKE CIGARETTES," the authors are Walter Willett, Adele Green, Meir Stampfer, Frank Speizer, Graham Colditz, Bernard Rosner, Richard Monson, William Stason and Charles Hennekens.

Q. Now you mentioned Frank Speizer. Is that the same Dr. Speizer who was one of your teachers at Harvard School of Public Health?

A. Yes. This is a -- this is a study based on the nurses health study. This paper is based on the nurses health study, as we mentioned.

Q. Doctor, did you review this study as part of your investigation in this case?

A. Yes.

Q. Does the study form part of the basis of the

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Support provided by the Tobacco Industry Documents Library at UCSF
http://www.tobaccodocuments.org/ucsf/docs/rqhd0001

opinions that you hold in this case?
A. Yes.
Q. And does this study -- or strike that.
Is this study a reliable authority in the scientific literature?
A. Yes.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 16039 into evidence as a learned treatise.
MR. GARNICK: No objection.
THE COURT: Court will receive 16039.
BY MR. HAMLIN:
Q. Doctor, I now want to direct your attention to a demonstrative exhibit illustrating the nurses health study. It's Trial Exhibit 30166.
MR. HAMLIN: We offer that exhibit, Your Honor, for illustrative purposes.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30166 for illustrative purposes.
BY MR. HAMLIN:
Q. Doctor, let's put that board on the easel. And the title of the demonstrative is "Nurses Health Study;" is that right, doctor?
A. Yes.

Q. And again we have two columns, "Design" and "Results;" right?
Can you tell us about the design of the nurses health study based on the bullet points in that exhibit.
A. Yes. This is another prospective cohort study. It involves follow-up of a large group of nurses, 120,000, contributing to this particular report. This is a study that produces results very frequently in the medical literature.
Q. Could you define for us once again what you meant by "cohort?"
A. This is a study where -- not starting with diseased and non-diseased people like in the case-control studies, where, for example, Wynder and Graham began with persons with lung cancer and persons without, in this case this population is 120,000, nurses who were on rosters of licensed nurses, The Nurses Association, who were asked to participate in this study. They were ages 30 to 55 at the time they were enrolled into the study. And they'd been followed for -- for their health, including the occurrence of coronary heart disease or heart attacks, cancer, and other health problems.
They answered a questionnaire when they entered

the study, and then approximately every two years they've answered a follow-up questionnaire. And one of the items about which they obtained information is smoking. The team obtained information from medical records as well, so if someone reports that they've had, let's say, a heart attack on the questionnaire,

http://legacy.library.ucsf.edu/tid/gon05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

then medical records are obtained and reviewed. So the study tracks the occurrence of new -- new heart attack incidence, and also then death or mortality.
Q. Can you turn now, doctor, to the column marked "Results."
A. Yes.
Q. Tell us what we see there.
A. Okay. This column provides the combined data for heart attacks that were fatal, so fatal coronary heart disease, and also for non-fatal heart attacks, or the technical term is myocardial infarction. We're again looking at relative risks for current smokers compared to never smokers, our never smokers being zero cigarettes per day, the number of cigarettes smoked per day, one to 14, 15 to 24, 25 or more, and then in this column we see something called the age-adjusted risk estimate. This just means that age has been taken into account so that it's as though the ages were similar in each of these groups.

Q. When you say that age is taken into account, can you give us an example of what you mean?
A. Yeah. This --
In other words, it's possible, let's say, that people in one of these groups of smokers might be older or younger than the never smokers. This potential imbalance in the age in the different groups has been taken into account, so when we look at the effects of smoking, there's no contamination by the effects of age differences between the groups.
Q. Could you now talk about the third column, which appears to be "Adjusted Risk Estimate."
A. Right. So we have two columns of relative risks, one age adjusted and the other adjusted with this star.
Now you can see that in the age adjusted alone column, there's a dose/response with a relative risk rising from one to six for those smoking 25 or more. Now this column over here is adjusted, and here they tried to take account of -- they've taken account of confounding factors, those factors that might have been influenced -- that might have been mingled with smoking so that they can look at the effects of smoking independent of the effect of these other factors. And they -- the factors that they've

controlled for are listed here, age, the interval of time of follow-up -- remember the study went on six years, so they've taken account of that -- Quetelet's index is simply a measure of the body mass; that is, the relative weight of the individuals, the menopausal status, which influences heart disease risk.. Hormone replacement therapy or taking replacement estrogens, family history, personal history of diabetes, another risk factor for heart attack, hypertension, and high blood cholesterol.
Now the point is that after controlling for all

http://legacy.library.ucsf.edu/tid/gon05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

of these potential confounding factors, these relative risk values comparing this center column where only age has been taken into account with this last column where they've taken into account age and everything else, is basically exactly the same. So in other words, while we're often concerned about the effects of confounding and as we assess cigarette smoking or other causes of disease, in this instance this adjustment had absolutely no impact on the relative risk of smoking.

Q. Thank you, doctor. You can return to the witness stand.

Now we've looked at a few studies on smoking and disease, doctor. Have you reviewed other studies on

smoking and disease in order to form your opinions in this case?

A. Yes, I have.

Q. Approximately how many?

A. Many. The database alone prepared includes over nine hundred studies.

Q. Doctor, if you could come down from the stand for just a minute, I want to direct your attention to the six boxes that are at the end of the bench in front of the jury's -- excuse me, in front of the judge's bench. Excuse me.

And I want to ask you this: Do those six boxes contain complete copies of the studies that you reviewed in this case to form your opinions?

A. Well these boxes include the original copies of the studies that have been entered -- entered into the computer database.

Q. Can you turn and face the jury when you --

A. Yes. These boxes contain complete copies of the 900 plus studies that have been entered into the computer database.

Q. And you reviewed the results of these studies?

A. That's right.

Q. And you've relied on them in part to form your opinions?

A. That's correct.

Q. And are these studies reliable authorities in the scientific literature?

A. Yes.

MR. HAMLIN: Your Honor, I've got a list of the trial exhibits that I would now move to offer the court that are in these six boxes: Trial Exhibit 15909, Trial Exhibits -- two Trial Exhibits 16026, Trial Exhibit 16028, the Trial Exhibit 16085, Trial Exhibit 16088, Trial Exhibit 16299, Trial Exhibit 16301, Trial Exhibit 16307, Trial Exhibit 16309, Trial Exhibit 16582, Trial Exhibit 16584, Trial Exhibit 16588, Trial Exhibit 16590, Trial Exhibit 16506, Trial Exhibit 16598, Trial Exhibit 16622, Trial Exhibit 16624, Trial Exhibit 16651, Trial Exhibit 16653, Trial Exhibit 16654, Trial Exhibit

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

16656, Trial Exhibit 16814. Your Honor, we offer these studies as learned treatises.

MR. GARNICK: No objection, Your Honor.

THE COURT: They will be received into evidence.

BY MR. HAMLIN:

Q. Doctor, did you also review reports of the Surgeon General of the United States on smoking and disease as part of your investigation in this case?

A. Yes, I did.

Q. And did you review the 1964 report?

A. Yes.

Q. Is that the report regarding lung cancer?

A. And other diseases, yes.

Q. And other diseases.

Did you review the 1989 report?

A. Yes, I did.

Q. Can you tell me the subject matter of that report?

A. The 1989 report was the 25-year progress and summary report.

Q. And did you review the 1990 report?

A. Yes, I did.

Q. And that is the report on smoking cessation?

A. That's the report on the health benefits of smoking cessation.

Q. And you were the senior scientific editor for that report.

A. Correct.

Q. And did you rely on those reports as well as others in forming your opinions in this case?

A. Yes, I did.

Q. Doctor, I want to direct your attention to trial Exhibit 20235. Now that's in the box next to the

witness stand. That is the International Agency for Research on Cancer monograph on smoking. Do you have that?

A. Yes, I do.

Q. Could you identify that for the record, doctor.

A. This is a monograph, copy of a monograph entitled "Tobacco Smoking, Volume 38," it's in a series entitled IARC, International Agency for Research on Cancer, World Health Organization, on the evaluation of the carcinogenic risk of chemicals to humans, published in 1986.

Q. Did you review this exhibit as part of your investigation in this case?

A. Yes, I did.

Q. And did you rely on this exhibit to form part of the basis of your opinions in this case?

A. Yes, I did.

Q. Do you consider this exhibit to be a reliable authority in the scientific literature?

A. Yes.

MR. HAMLIN: Your Honor, we offer trial

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

Exhibit 20235 as a learned treatise.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 20235.
BY MR. HAMLIN:

Q. Doctor, has the Surgeon General of the United States provided any guidance or criteria to determine whether smoking is a cause of disease?
A. Yes. The 1964 Surgeon General's report set out a set of criteria for evaluating evidence on smoking as a cause of disease.
Q. Doctor, I want to direct your attention to Trial Exhibit 30156, which is a demonstrative exhibit titled "Causal Criteria."
MR. HAMLIN: And Your Honor, at this time we offer this exhibit into evidence for illustrative purposes.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30166 for illustrative purposes.
Q. Let's put the exhibit on the board. And doctor, could you tell us what's on the exhibit, and perhaps begin by -- by reading it.
A. Yes. This exhibit describes text on page 20 of the 1964 Surgeon General report. It says, "Statistical methods cannot establish proof of a causal relationship in an association. The causal significance of an association is a matter of judgment which goes beyond any statement of statistical probability. To judge or evaluate the

causal association of the -- causal significance of the association between the attribute or agent and the disease, or effect upon health, a number of criteria must be utilized, no one of which is an all-sufficient basis for judgment. These criteria include:
"The consistency of the association
"The strength of the association
"The specificity of the association
"The temporal relationship of the association
"The coherence of the association.
"These criteria were utilized in various sections of this Report. The most extensive and illuminating account of their utilization is to be found in Chapter 9 in the section entitled 'Evaluation of the Association Between Smoking and Lung Cancer'."
Q. Doctor, could you go over the causal criteria in this exhibit and explain what each one means, beginning with the first one.
A. Yes. Consistency refers to the consistency of findings on replication; that is, has the -- have multiple studies each shown the same finding? Have the results been consistent?
Strength refers to essentially what we have been

http://legacy.library.ucsf.edu/tid/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

talking about, how strong is the relative risk values? Higher relative risk values are more difficult to explain by the actions of other factors perhaps, uncontrolled-for confounders. Under strength we also look at dose/response. Does the risk rise, relative risk rise as the degree of exposure to cigarette smoking increases, the number of cigarettes per day, or the number of years that someone has been smoking? Specificity is not so relevant to smoking. By "specificity," it means is there a unique relationship between smoking and disease; that is, does smoking only cause one disease, and is that disease only caused by smoking?

There are very few examples, in fact, where one disease has only one cause and that cause doesn't cause something else. So in terms, for example, of specificity for lung cancer, we know that smoking is the predominant cause of lung cancer, but there are other causes. For heart disease we know that smoking is a major cause, but we know that there are other causes. So specificity will be found not to apply very well as we look at the evidence.

Q. Could you talk about the temporal relationship of the association, doctor.

A. The temporal relationship simply means that

smoking should come before the effect; that is, there should be a proper ordering of the relationship, so that people begin smoking and at some point after they have smoked, been exposed to the disease-causing agents in the smoke, disease occurs. And as we look at the risks of smoking-caused diseases, we'll be seeing that most of those diseases take some time to develop. People smoke first, and then the diseases develop later, fulfilling this criterion of the temporal relationship.

Q. And could you then turn to the last criteria, the coherence of the association.

A. All right. By coherence, we mean how does the evidence fit from all variety of lines of information? For example, have disease risks -- rates risen in the population in parallel with smoking? What do we know about experimental work? What do we know about the biological basis by which smoking could cause the disease? What happens when people stop smoking, do the disease risks go down? And so forth. So under coherence, we bring together all the lines of information. We consider alternative explanations. Are there any plausible alternatives to smoking being the cause of disease?

Q. Doctor, how are these criteria used?

A. Okay. These criteria have been applied periodically by the Surgeon General, by the Surgeon

http://legacy.library.ucsf.edu/tid/gom35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

General's reports, in looking at the evidence on smoking and disease. There are guidelines by which the evidence is appraised and a determination is made as to whether the evidence is sufficient to warrant the conclusion that smoking causes disease, a causative conclusion.

Q. Do all of the criteria have to be met in order to find cause?

A. No, all the criteria do not have to be met. In fact, that's expressed on this board in front of us, that a number of criteria must be utilized, no one of which is an all-sufficient basis for judgment, nor do all criteria need to be met.

Q. Did you rely on these criteria in forming your opinions in this case?

A. Yes, I did.

Q. Doctor, how often does the Surgeon General apply these criteria to evidence of smoking and disease?

A. Well, although a Surgeon General's report is issued almost every year, although we have not had one since '94, each report is not a progressive updating of the prior reports. So that, for example, cancer was the topic of the 1982 report, but cancer

has not been systematically reviewed subsequently. Heart disease was the 1983 report. So the evaluation of the evidence has been on specific diseases, has been episodic rather than done in each report looking at all the evidence.

Q. Doctor, could you give us an example of how you applied these criteria to a specific disease such as lung cancer?

A. Yes.

MR. HAMLIN: Before you do that, I would like to offer another demonstrative exhibit, it's Trial Exhibit 30155, it's entitled "Causal Criteria, 1964 Surgeon General's Report," and we would offer that for illustrative purposes only, Your Honor.

MR. GARNICK: Mr. Hamlin, can I have that number again, please?

MR. HAMLIN: Yes, 30 thousand -- I'm sorry, it's 30155.

MR. GARNICK: No objection, Your Honor.

THE COURT: Court will receive 30155 for illustrative purposes.

BY MR. HAMLIN:

Q. Dr. Samet, can you tell us what appears on this exhibit, which is titled "Causal Criteria 1964 Surgeon General's Report?"

A. Yes. This board simply lists the criteria that were on the previous board which represented page 20 of the 1964 Surgeon General's report.

Q. Okay. Now let's go back to the lung cancer example. Let's take the first criteria, consistency. What evidence is there of consistency with respect to lung cancer?

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

A. Well lung cancer has been studied over and over again in epidemiological studies across the decades. The findings of these studies have shown over and over again that the relative risk of lung cancer is increased by cigarette smoking.
Q. Doctor, do you have an animation that could illustrate this point? That's Trial Exhibit 30255. That is the animation.
A. Yes, I do.
Q. All right. Could you turn to that now.
A. This exhibit simply shows the findings of studies in the computerized database prepared for this testimony. What we're seeing is the relative risks of the epidemiological studies for lung cancer in men, we're seeing the relative risks of lung cancer in these studies included in the database based on the year, referring to the year in which the study was reported across the bottom, and you can see

the planes here, 1X being the relative risk for non -- never smokers, and then just for reference there is a plane set at a relative risk of 10, a one thousand percent increase, and then each bar simply represents the findings of an individual study. And the numbers, which you may or may not be able to see at the top of each bar, are the actual relative risk values. So you can see that all of these points are above one, some are quite high, and a number are well above the plane showing a relative risk of ten.
Q. And what is the source of this graph again, doctor?
A. Again, these relative risk values are included in the studies that are in the boxes in front containing the over 900 studies entered into the computer database. These are the relative risk values taken from those studies.
Q. These are the studies that you reviewed.
A. Correct.
Q. Now do we also have an animation for women?
A. Yes, we do.
Q. Could we see that now.
A. Again, this will be a very similar animation, now showing the relative risk for lung cancer in women, looking at studies published from 1950 on.

Again relative risk of one for never smokers, and now you can see the data for women included in the database. These are the relative risks of values, one being the relative risk reference value for never smokers, and again you can see the plane set at 10 just to give you sort of a fix on these relative risk values.
Q. And doctor, what is the source of the information in this graph?
A. Again, the source of the information in this graph is the studies that have been reviewed and then abstracted with their findings into the computer

http://legacy.library.ucsf.edu/tid/gom35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

database.
Q. Do you have any -- well let me -- let me turn now to the strength of the association.
Can you tell us what evidence there is of the strength of the association with respect to lung cancer?
A. Again, simply looking at the relative risk values, we saw for men values that ranged up to 20 or more in looking at the animation as showing again here. So again, as you see the numbers rise, many relative risk values above ten, or over a one thousand percent increase, some values as high as 20, simply comparing the relative risk in smokers to

relative risk in never smokers. These are very strong increases in relative risk.
And again, just revisiting the animation for women, we again see relative risk values in general quite high and a number well above ten in this animation.
Q. Doctor, I want to now direct your attention to -- I think it's Trial Exhibit 30092, which is a demonstrative exhibit, and that's in your book. And if we could get the overhead ready for that.
MR. HAMLIN: Your Honor, that trial exhibit is titled "Relative Risk of Lung Cancer by Cigarettes Smoked Per Day: Current Smokers Versus Never Smokers - Men." And we offer that for illustrative purposes.
MR. GARNICK: Your Honor, I don't think a foundation has been set for this. There's no indication where the data came from or what study it's based on.
MR. HAMLIN: Yeah.
THE COURT: Lay a foundation, counsel.
MR. HAMLIN: Certainly.
BY MR. HAMLIN:
Q. Doctor, do you have that graph in front of you?
A. Yes, I do.

Q. Okay. And can you tell us the source of the data?
A. Yes. These data -- the graphs represent the data that have been abstracted from the original epidemiological studies on smoking and lung cancer, and these graphs simply show the findings in those publications as they have been abstracted and entered into the computer database. Based on that database, we have prepared this graph, which simply shows the relative risk values for individual studies included in the database by the number of cigarettes smoked per day.
Q. So this graph is based on the studies that you have reviewed for purposes of your investigation in this case; is that right?
A. That's correct.
Q. And they are contained in the six boxes that we

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

have previously identified.
A. That's correct.
Q. And these are reliable authorities in scientific literature; right?
A. Yes.
MR. HAMLIN: All right. Your Honor, at this time we'd offer Trial Exhibit 30092 for illustrative purposes.

MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30092 for illustrative purposes.
BY MR. HAMLIN:
Q. Doctor, we now have that trial exhibit on the overhead, and could you first of all read the title again.
A. The title is "Relative Risk of Lung Cancer by Cigarettes Smoked Per Day: Current Smokers Versus Never Smokers - Men."
Q. Now can you tell us what's on the various axes of the graph first?
A. Yes. On the bottom axis, on the X axis, is the number of cigarettes smoked per day. You can see going from zero, which of course is the never smokers, number of cigarettes smoked per day, out to 60. And not well seen on this graph, but just below that horizontal line across corresponds to a relative risk value of one, the value for never smokers.
Q. Is that on the left-hand side, doctor, at the bottom there?
A. Yes, it is.
Q. Okay. And that's the value for never smokers.
A. That's the value for never smokers.
The vertical axis, the Y axis, is the relative

risk of lung cancer in the current smokers in these studies compared to the never smokers at the various levels of cigarettes smoked per day.
Q. Now what do the lines represent, doctor?
A. Each line represents the dose/response in an individual study. So all we've done is taken the dose/response relationships, like we saw in the tables that I showed you before, and now just turned those into lines. So the lines are just connecting the dots on the individual -- on the estimates of relative risk for each level of cigarette smoking. So, for example, I know it's hard to pick out some of the individual lines, but this tall first line going up to 81 is the result of one study, and all the lines will connect down to 1.0, the value for never smokers.
Q. Now I'm not sure we were clear on that. Is the line a study?
A. Each -- each of these lines going from left to right --
Q. Right.
A. -- represents the dose/response within an

http://legacy.library.ucsf.edu/tid/gon05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/rqhd0001

individual epidemiological study, yes. So this --
Q. And what do the dots represent?
A. The dots represent the values obtained in the

studies for -- the relative risk values obtained in the studies for a particular level of cigarettes smoked per day. And then all we've done really is connect the dots to generate the line. So it's to show you the relative risk values in each study that we've done this. So this really corresponds, for example, to the table that I showed for the Wynder and Graham study or the Doll and Hill case-control study, now we just plotted the results onto a graph like this, taken those points and connected them to make a line for each study.
Q. And what is the significance of the graph here? What is it that we see?
A. Well, we can see a lot here. We can see that, first, that there are many studies, there are many lines on -- on the graph, and this graph includes only those studies that were included in the computer database. We can see that the findings of the studies are consistent. We can see that all the lines rise, so that as the number of cigarettes goes up smoked in each study by the current smokers, the relative risk values go up.
So you can see while there's some -- not all lines are as steep as other lines, the lines all go up; that is, in each study we see a dose/response

relationship between the number of cigarettes smoked and the relative risk for developing lung cancer.
Q. Let's now go to Trial Exhibit 30093. Your Honor, this is entitled "Relative Risk of Lung Cancer by Cigarettes Smoked Per Day: Current Smokers Versus Never Smokers - Women."
First of all, doctor, can you turn to that exhibit.
A. Yes.
Q. And what is the source of the data in this exhibit?
A. As for the similar plot for men, it is a study abstracted, included in these boxes and placing -- the findings placed into the computer database.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 30093 for illustrative purposes.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 30093 for illustrative purposes.
BY MR. HAMLIN:
Q. Again, doctor, could you tell us what we see on this graph, and if you could, begin with the axes and then we'll get into the specific data.
A. Again, this -- this information is laid out, this graph, just like the last one, with the number

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

of cigarettes per day on the horizontal, and then on the vertical the relative risk for lung cancer in current smokers of varying numbers of cigarettes per day compared to never smokers.

Q. And what is the significance of the graph that we see?

A. Again, in this graph for women, like the previous graph for men, we see consistency in that the lines for the most part tend to rise with the number of cigarettes smoked per day; that is, the relative risk increases with the number of cigarettes smoked per day.

In terms of dose/response, we see dose/response relationships in the studies included in the computer database. In terms of the strength of the relative risk, as for men, we can see that many of the values at the upper end of smoking are quite -- quite high, a number of the lines even having values higher than 30 at their end, meaning the highest smoking groups in these studies of women had risk of lung cancer 30 times more than that -- at least 30 times more than that of never smokers.

Q. And again, each line represents what?

A. Again, as for the men, each line represents the findings of one epidemiological study. So as for

men, we see consistency in the findings for the lung cancer dose/response, as we did for men.

Q. This is for women.

A. That's right. This is for women, correct.

Q. And again, each dot represents what?

A. The dots represent the individual points, the individual -- relative risk values in the individual studies. So the values, for example, out here towards the right, would correspond to those for women smoking 30 or more cigarettes per day in the individual studies.

Q. Now using your lung cancer example and the information and studies that you've just discussed, have the criteria of consistency and strength been met?

A. Yes, they have. I think we've seen the findings of many epidemiological studies done over time that have been consistent. We've seen very strong very high relative risk values. We've seen consistently that the relative risk for lung cancer in smokers compared to never smokers increases with the number of cigarettes smoked per day. We've seen those findings in men and women alike.

Q. Let's go to the next criteria, doctor, that's specificity.

A. Yes.

Q. And can you explain whether that criteria has been met?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

A. Again, I've commented on specificity earlier, that is the idea that one factor only causes one disease and that disease is only caused by one factor. Well we know that's not true in the case of smoking and lung cancer. First we know that smoking causes diseases besides lung cancer, and second we know that smoking has causes other than lung cancer. So in terms of specificity, this criterion is neither met nor is it particularly applicable to this well-worked-out problem of smoking and lung cancer.
Q. We go to the next criteria, which is the temporal relationship. Could you tell us whether that criteria has been met?
A. Yes. Temporality listed there just simply refers to the timing: Did smoking come before the lung cancer? Well, the data on -- on lung cancer and age show clearly that smoking begins and the smoker smokes a while, sometimes a long time before lung cancer develops. So when we look at the occurrence of lung cancer in the population, when does lung cancer start? We don't begin to see lung cancer cases occurring until people reach approximately the

thirties to the forties, and that would typically be following at least several decades of smoking. So smoking comes first, and then as the effects of smoking come into play in causing lung cancer, the age-related curve of lung cancer occurrence begins to rise. So temporality is met.
Q. Let's turn to the fifth criterion, which is coherence. What evidence is there of coherence?
A. Okay. Coherence refers to a number of lines of evidence that may be relevant. It would include information on how the number of cases have changed over -- over time, and does that change over time in the number of cases seem to be reflective of the changes in smoking patterns? It would include information on what happens to the risks after smoking cessation. It would include the general knowledge of how smoking acts to cause lung cancer, some of the mechanisms that come into play. It would also include consideration of any plausible alternative explanations to smoking being the cause of lung cancer.
Q. How common was lung cancer at the turn of the century, Dr. Samet?
A. Lung cancer was seemingly a rare disease at the turn of the century.

Q. Now I want to go to a demonstrative exhibit next, but first let me direct your attention to Trial Exhibit 26009. That's in your box, which is down on the chair.
Now this exhibit is information from the Minnesota Department of Health. Have you reviewed this data?
A. Yes, I have.

http://legacy.library.ucsf.edu/tid/gom35a00/pdf
Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

Q. And does it form part of the basis of your opinions in this case?
A. Yes.
Q. And is it a reliable authority?
A. Yes.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 26009 into evidence.
MR. GARNICK: No objection, Your Honor.
THE COURT: Court will receive 26009.
BY MR. HAMLIN:
Q. Now Dr. Samet, I want to show you Trial Exhibit 30090, which is a demonstrative exhibit entitled "Annual Number of Deaths Due to Lung Cancer in Minnesota, 1950 to 1995." Do you have that demonstrative in front of you?
A. Yes, I do.
Q. Okay. And is the basis and the source of

information for this demonstrative Trial Exhibit 26009?
A. Yes.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 30090 into evidence for illustrative purposes.
MR. GARNICK: No objection.
THE COURT: Court will receive 30090 for illustrative purposes.
BY MR. HAMLIN:
Q. Doctor, I want to direct your attention to that exhibit. As I said -- well why don't --
Why don't you tell us, first of all, the title of the exhibit.
A. Okay. The title of the exhibit is "Annual Number of Deaths Due to Lung Cancer in Minnesota, 1950 to 1995," men the solid line, women the dashed line.
Q. And can you tell us what the axes are for this graph?
A. Yes. The bottom axis, the horizontal or X axis is simply year, going from 1950 through 1995, and the vertical axis is simply the number of deaths on a scale going from zero to 1400.
Q. And the solid line is men?

A. That's correct.
Q. And the broken line is women.
A. That is correct.
Q. Okay. Can you explain to us the significance of this graph.
A. Well I think what's clear here is the progressive rise in deaths from lung cancer in men in Minnesota from 1950 to 1995 and for women in Minnesota from 1950 to 1995, rising from being perhaps several hundred cases to -- pushing towards several thousands deaths in 1995. These trends would be more or less parallel to what we know nationally where in 1950 there were approximately 18,000 deaths

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

a year in the United States from lung cancer, and now that total is around 160,000 deaths per year. It's roughly a near ten-fold increase, perhaps a little bit less.
Q. Doctor, I want to direct your attention now to another demonstrative exhibit. It's 30096, it's entitled "Relative Risk of Lung Cancer by Number of Years Quit Smoking: Former Smokers Versus Never Smokers." Do you have that exhibit in front of you?
A. Yes, I do.
Q. And what is the source of the data in this exhibit?

A. Again, the source of the data in this exhibit are the studies that have been reviewed and abstracted and placed into the computer database. And this graph simply shows some of the findings of those studies.
MR. HAMLIN: Your Honor, at this time we offer Trial Exhibit 30096 for illustrative purposes only.
MR. GARNICK: No objection.
THE COURT: Court will receive 30096.
BY MR. HAMLIN:
Q. Can we put that up, please.
Doctor, could you first read the title of the graph.
A. Yeah. This graph is entitled "Relative Risk of Lung Cancer by Number of Years Quit Smoking: Former Smokers Versus Never Smokers."
Q. Could you tell us what the axes of the graph represent?
A. Yes. And I neglected to say that this is for men.
The horizontal axis here is the number of years that in this case people who have stopped smoking had stopped and stayed -- remained former smokers, going from zero out to 30. The Y axis, the vertical axis,

is the relative risk scale for developing lung cancer in these former smokers compared to never smokers, and again, one, the relative risk for never smokers, is marked on the graph, and the line extends across the whole bottom of the graph.
Q. What do the lines represent?
A. Again, the lines on this plot, as in the dose/response plots, are the findings of individual epidemiological studies, each line showing the relative risk of lung cancer in former smokers compared to never smokers by the number of years quit. So in other words, here we have dots representing the individual points in the studies for the specific years quit, and for each individual study the dots are simply connected to show the general pattern of how the relative risk for developing lung cancer drops after people stop smoking.

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

Q. What does that have to do with coherence?
A. Okay. Again, this is some of the type of evidence that we examine in looking at coherence. In the last two graphs we saw how the number of lung cancer cases had risen in Minnesota, heard about how the number of lung cancer cases -- deaths -- have risen in the United States, consistent with the rise

of smoking across the century. Now we ask the question, well, if smoking causes lung cancer, we would also expect that when people stop smoking, that the relative risk would drop. And here we see that in fact the relative risk does drop with time that people have stopped smoking, declining towards the relative risk for never smokers, although in most of these studies the lines remain well above the one out to a substantial number of years after stopping smoking. So people who have quit smoking certainly have a maintained risk for developing lung cancer.
Q. Doctor, I now want to direct your attention to another demonstrative exhibit, Trial Exhibit 30097. Title of that exhibit is "Relative Risk of Lung Cancer by Number of Years Quit Smoking: Former Smokers Versus Never Smokers - Women." Do you have that?
A. Yes, I do.
Q. And what is the source of the data for this exhibit?
A. Again, as for the previous exhibit, the source of this exhibit is the data obtained in the epidemiological studies in the computerized database. And this exhibit simply shows the findings of some of those studies.

MR. HAMLIN: Your Honor, at this time we offer Trial Exhibit 30097 for illustrative purposes only.
MR. GARNICK: No objection.
THE COURT: Court will receive 30097 for illustrative purposes.
BY MR. HAMLIN:
Q. Could we put that on the overhead.
Once again, doctor, could you tell us what's on the very -- what's on the axes of the graph?
A. Okay. This graph is laid out the same way as the previous one for men, although this one is for women. We see the relative risk for lung cancer in former smokers compared to never smokers plotted against the number of years that those women have stopped smoking.
Q. Can you tell us what the lines represent?
A. Again, the lines represent the results of individual studies. Again, the dots for the specific points in the studies have just been connected to form the lines, so each line represents the findings of one epidemiological study.
Q. And what do we see here in terms of relative

http://legacy.library.ucsf.edu/id/ggm35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/rqhd0001

risk?
A. Again, as for men, we can see that the relative risks for former smokers compared to never smokers for developing lung cancer drop with increasing number of years quit, in this pattern shown here, declining from these very strong relative risk values to somewhat lower values, but remaining somewhat above one, although continuing to decline over time.
Q. So the pattern that we see for women is similar to the pattern we've seen for men?
A. That's correct.
Q. Is this further evidence of coherence?
A. Again, as I've said, we would expect that if cigarette smoking is causing lung cancer, that withdrawal of exposure to the carcinogens in tobacco smoke would lead to a reduction in risk, which is what we observed here, although seemingly even with relatively long follow-up, these risks remain higher than those of never smokers.
Q. Doctor, are there other --
Are there explanations other than smoking for what we're seeing here?
A. Well I think when we put the full pattern together, what we saw with the consistency and the very strong risks in smokers that we saw in the animations, the dose/response, the rise in relative risk in smokers with numbers of cigarettes smoked per

day, and the declining relative risks when people stop smoking, I have no explanation other than smoking as the cause of lung cancer.
If you think about some alternative, we would have to be missing something that was associated with smoking that in fact could cause lung cancer risks at least as high as those we see in smokers or even higher, they would be associated with the number of cigarettes smoked per day, and when people stop smoking, somehow that factor would stop having any effect. And in spite of literally 50 years of epidemiological investigation, no one has ever found any alternative explanation to these findings except that smoking is the cause of lung cancer.
Q. Doctor, do we have other evidence of coherence with respect to lung cancer and smoking?
A. There are many lines of biological investigation into how smoking causes lung cancer. We're becoming increasingly sophisticated in terms of our ability to understand how the carcinogens in tobacco smoke act to cause lung cancer.
There's a very recent report, for example, on one of the carcinogens in tobacco smoke, benzo(a)pyrene. In a study that was published a little over -- about a year and a half ago, it was

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

found that the activated metabolite of this carcinogen, the activated carcinogen itself binds to a very important gene at the very spots where we see mutations in that gene in smokers. Let me just state this again. The gene that is of concern here is what's called the tumor suppressive gene. That's the gene that suppresses the growth of potentially cancerous cells, and we need this gene, P-53, to be in good order to do housekeeping with cells that are getting out of line.

What we find in cancers in smokers is that this gene is frequently mutated, it's changed, and we think the P-53 can't do its job. What this recent study showed was that in people who don't have lung cancer but who smoke, we can find this activated carcinogen sitting right on the spots in the genes where we later find changes in cancers in smokers. And this is only one of the many studies that we're now able to do with the very new techniques of cancer biology and cancer genetics.

Q. So doctor, is the coherence criterion met?

A. Yes, there's no question that the coherence criterion is met.

Q. Doctor, I want to turn now to the disease of lung cancer. Can -- can you explain to the jury and

the court what lung cancer is?

A. Okay. Well lung cancer is, of course, a cancer of the lung. And by "cancer," we mean the development of a mass of cells that have uncontrolled, unrestrained growth. And we think that most cancers originate with one cell which gets out of control, divides and divides and divides until it forms a large mass, perhaps does local damage, and many cancers can spread throughout the body, something we call metastasis. And lung cancer simply refers to the cancers that arise at the primary organ of origin in the lung.

Q. Doctor, I want to direct your attention to a demonstrative exhibit, Trial Exhibit 30068. It's "Tumor Development Occurs in Stages." Do you recall?

30068, do you have that? If you don't, I'll bring it up to you.

MR. HAMLIN: Your Honor, if I could approach.

A. Ah, sorry.

Q. Do you have it?

A. Yes. Thank you.

Q. Can you tell me what that drawing is?

A. Yes. This is a -- simply a schematic diagram of how a cancer would arise in the lining of the lung or

perhaps another organ. It's taken from a Scientific American article published in 1996.

Q. And is that a reliable authority in the scientific literature?

http://legacy.library.ucsf.edu/tid/gon35a00/pdf
Support provided by the Tobacco Industry Documents Library at UCSF
http://www.tobaccodocuments.ucsf.edu/docs/rqhd0001

A. Yes.
MR. HAMLIN: Your Honor, we'd offer Trial Exhibit 30068 for illustrative purposes only.
MR. GARNICK: No objection.
THE COURT: Court will receive 30068 for illustrative purposes.
BY MR. HAMLIN:
Q. Doctor, can you tell us what we see on this drawing? And I think we probably are going to have to go left to right to get a --
A. Yes.
A. -- close-up of the left side first.
A. Yes. This exhibit, moving from left to right, simply shows on one panel how normal -- a normal cell genetically changed to become a cancer would develop, moving through stages, first with what's called hyperplasia, or just an area of overgrown cells, moving to further abnormal cells, something called dysplasia, and moving on as the cancer develops, the process moves forward, to form what's called an in situ cancer. That just refers to a cancer that's

localized. And if you can see here in this diagram, the cancer is sitting above the black band which is one of the membranes within this surface.
Then as the cancer continues to develop and -- and perhaps as its behavior becomes more aggressive, it would invade beyond the superficial lining of the surface, but say the lining of the lung in the case of lung cancer, and cause local damage, perhaps invade blood vessels as shown here to spread throughout the body and go to distant sites, like the brain or perhaps to bones.
Q. What color are the -- are the cancer cells there?
A. Well the cancer cells are shown here in the -- in the blue moving on down.
Q. Now can these cells -- these cancer cells spread to other sites?
A. Yes, they can.
Q. Can you give us some --
A. Yeah.
Q. -- information on that?
A. Certainly. The cancer cells, the cancer mass may invade locally and simply spread through the lung and through the chest wall. The cells can also enter into the bloodstream and spread to sites outside the

lung. Some of the common sites are the brain, the bone, the spinal cord, the liver, the adrenal glands, are some of the common sites to which lung cancer spreads.
Q. Now doctor, I want to direct your attention now to another demonstrative exhibit, Trial Exhibit 30081. Do you have that?
A. Yes, I do.
Q. Can you tell us what that is?

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/rqhd0001

A. Yes. This is simply a text figure of the appearance of a brain with a cancer metastasis in it.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 30081 for illustrative purposes only.
MR. GARNICK: No objection.
THE COURT: Court will receive 30081 for illustrative purposes.
BY MR. HAMLIN:
Q. Now doctor, can you tell us what we see in this photograph?
A. Yeah. Here we're just simply looking at an image of the brain obtained with a CT or CAT scan showing a tumor mass in the brain. Here, this would be a metastasis, and what you can see in this darker area surrounding it is simply the swelling that often occurs around a metastasis in the brain. And of

course having a large mass in the brain like this may severely affect the functioning of that part of the brain. One of the common presentations of lung cancer is with metastasis to the brain.
Q. Can you tell us, doctor, how lung cancer is diagnosed?
A. Yes. Typically these days lung cancer is diagnosed by one of two means, doing a bronchoscopy, this is done with a flexible tube, it's called the fiber-optic bronchoscope, it is fiber-optic, and the operator can actually see down this tube into the lung. The tube is just passed down the nose and the mouth through the voice box and into the lung, and there one can actually visualize lung cancers, take biopsies from the surface to establish the diagnosis, and examine the extent of the tumor. This is something that, unfortunately, I've done many, many times, seeing many, many cancers and known without a doubt what the outcome would be for that individual.
The other way that we make the diagnosis now --
Q. When you say that you know without a doubt what the outcome is, what do you mean by that?
A. Well what I'm referring to is just generally for prognosis from lung cancer, approximately 10, 12 percent five-year survival, so for those of us who

practice pulmonary medicine, we frequently face the very difficult task of doing a bronchoscopy, identifying the cancer, and go to talk to someone an hour or two later when they've woken up from sedation and tell them what lies in store for them. This is simply never easy.
Q. Doctor, what -- what are the symptoms of lung cancer? And if you could begin with local symptoms.
A. Yeah. Think about the symptoms from lung cancer in two ways, those that just come from the tumor itself, and those that come from spread.
So a tumor growing within the lung may cause cough. The surface may erode and there may be bleeding, and people with lung cancer often present

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/rqhd0001

coughing up blood. They may have chest pain if the cancer erodes into the surrounding tissues, say the esophagus, the swallowing tube, into the ribs or other -- or other structures. They may have pneumonia because the tube is actually blocked, the secretions behind it can't be cleared, and bacteria find a fertile ground for growing and causing pneumonia that may be very difficult to treat.
Q. And are there general symptoms?
A. Yes. There are a variety of general symptoms of lung cancer. Many in fact. One is simply weakness,

loss of energy. There may be pain from sites that have metastasis growing in them. There may be the many possible symptoms of having cancer spread into the brain and interfere with functioning. There are metabolic syndromes, the sodium being too high, the calcium -- the sodium being too low, the calcium being too high, and many other problems.
So the face of lung cancer is varied. There are many symptoms associated with its general manifestations.
Q. What happens when the metabolic system is interfered with by lung cancer?
A. There can be some very difficult problems to -- to control for physicians. For example, high levels of calcium may make people virtually comatose. This is often a very difficult problem to manage during the course of a lung cancer -- course of a patient's treatment.
MR. HAMLIN: Your Honor, if I may approach the witness.
BY MR. HAMLIN:
Q. Doctor, I want to show you two trial exhibits, first is Trial Exhibit 30051, the other one is Trial Exhibit 30213. Trial Exhibit -- could you identify Trial Exhibit 30051?

A. 30051 is essentially a bag containing a slice of lung labeled normal lung.
Q. This is a human lung?
A. Yes.
Q. And could you identify Trial Exhibit 30213?
A. Yes. Again, this is a formalin-filled bag containing a slice of lung with a lung cancer present.
Q. And doctor, do you know whether the cancerous lung came from a smoker?
A. It's my understanding, speaking with Dr. Barbara Bowers, an oncologist in the Twin Cities, is that the lung cancer is a non-small-cell lung cancer from a smoker.
Q. And that's where you obtained this sample from?
A. That's correct.
Q. With respect to the normal cell, doctor, do you know whether the -- or strike that, the normal lung.
With respect to the normal lung, do you know

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

whether the normal lung came from a non-smoker?
A. It's my understanding, again from Dr. Bowers, that the normal lung came from a non-smoker.
MR. HAMLIN: Your Honor, we offer trial Exhibits 30051 and 30213 for illustrative purposes.
MR. GARNICK: Your Honor, we probably have

no objection, if I could take a look at that.
MR. HAMLIN: Sure.
MR. GARNICK: Thank you. No objection.
THE COURT: Court will receive 30051 and 30213 for illustrative purposes.
MR. HAMLIN: Your Honor, at this time I would ask the court's permission to pass those exhibits to the jury.
THE COURT: All right. Michele.
(Exhibit passed to the jury.)
THE COURT: Excuse me, doctor, are these marked so the jury will know which is which?
THE WITNESS: Yes.
THE COURT: And can you again explain to the jury which one that is?
THE WITNESS: Yes. The exhibit that's being passed now is the normal lung, and what you should appreciate is its homogeneous surface, it's smooth and the architecture that we saw in the animations is maintained.
BY MR. HAMLIN:
Q. So the exhibit that was just passed to the jury was the normal lung.
A. That's correct.
Q. Okay. Could we now pass the cancerous lung.

A. Yes. If I -- if I could just comment.
Q. Yes.
A. What you'll see when it's passed is, again, a slice of lung with the brownish color that you saw in the normal lung, but now you're going to see a very large white mass. Of course that's the cancer, the white is the cancer, and you can see how it's spread throughout the lung and destroyed the architecture of the lung. So essentially the cancer has, if you will, eaten up the normal lung that we saw in the prior slice.
MR. HAMLIN: Your Honor, this may be a good time to break.
THE COURT: All right. We'll recess at this time, reconvene tomorrow morning at 9:30.
THE CLERK: Court stands in recess to reconvene tomorrow morning at 9:30.
(Recess taken.)

http://legacy.library.ucsf.edu/id/gon35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/rqhd0001

http://legacy.library.ucsf.edu/tid/gom35a00/pdf
Source: http://www.tobaccodocuments.ucsf.edu/docs/rqhd0001